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Telephony

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SINCE 1901

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TELEPHONE CENTENARIAN

Samuel B. Shepard, president of Saco River Telephone Co., Bar Mills, Me., is probable winner for distinction of oldest active telephone executive. Still young in spirit, he traded jokes with many friends who celebrated his 102nd birthday in August. See p. 50.

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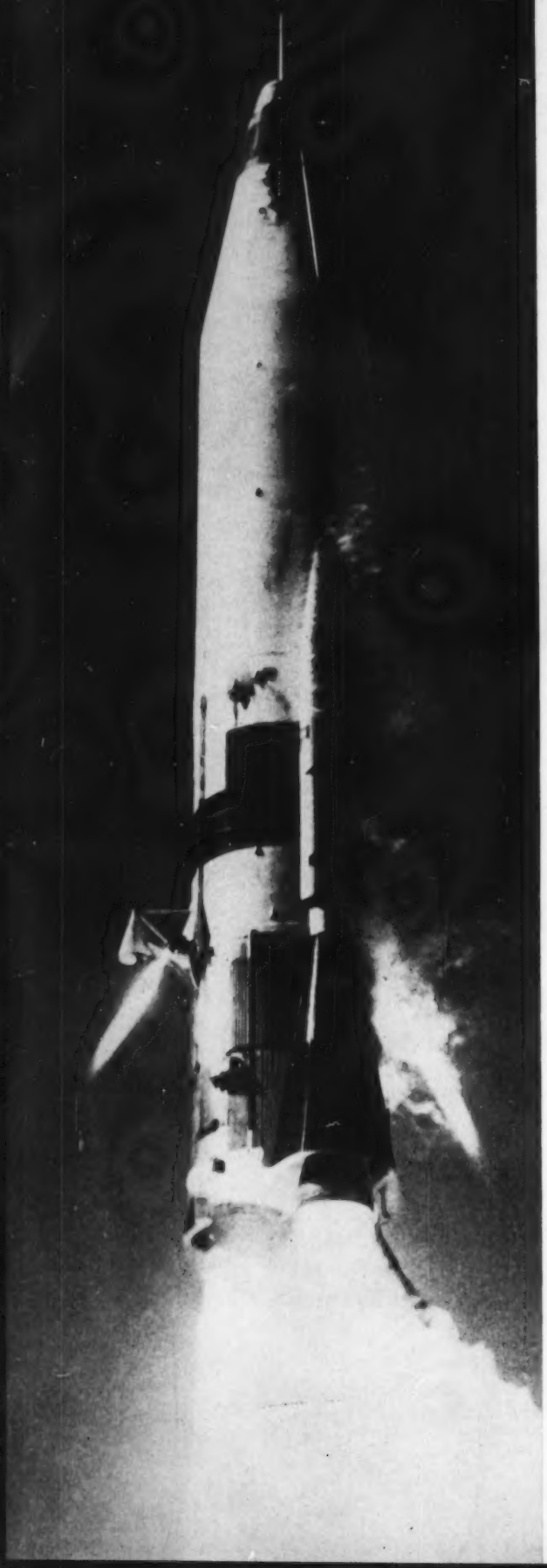

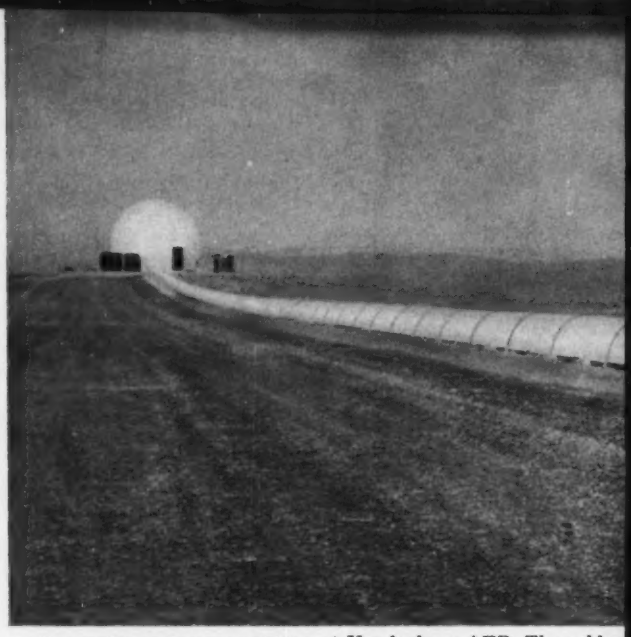

Waveguide and antenna shelter at Vandenberg AFB. The cable

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Atlas ICBM shortly after take-off.

nside the waveguide forms part of Kellogg's vast communications system at America's only missile training center.

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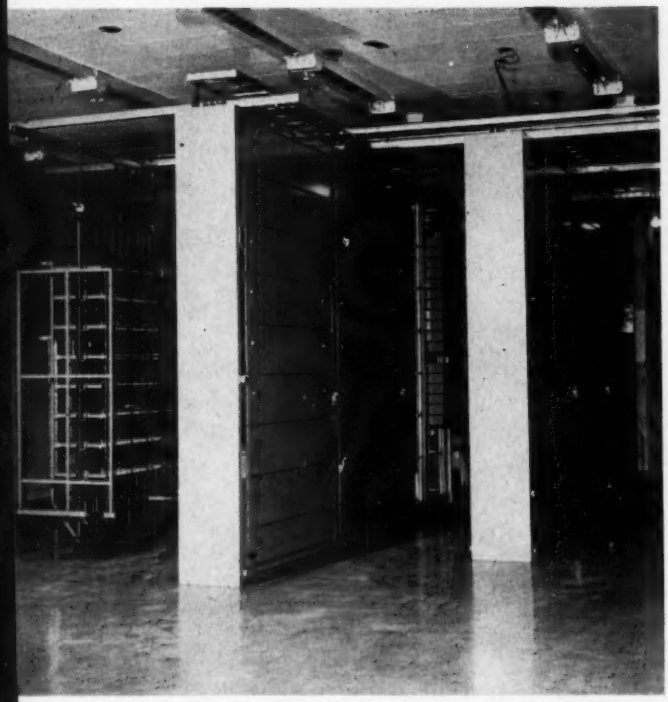

K-60 Crossbar was selected by the Air Force Ballistics Missiles Division to insure reliability of weapon system communication.

Kellogg engineers at Vandenberg confer in the shadow of an Atlas launching pad.

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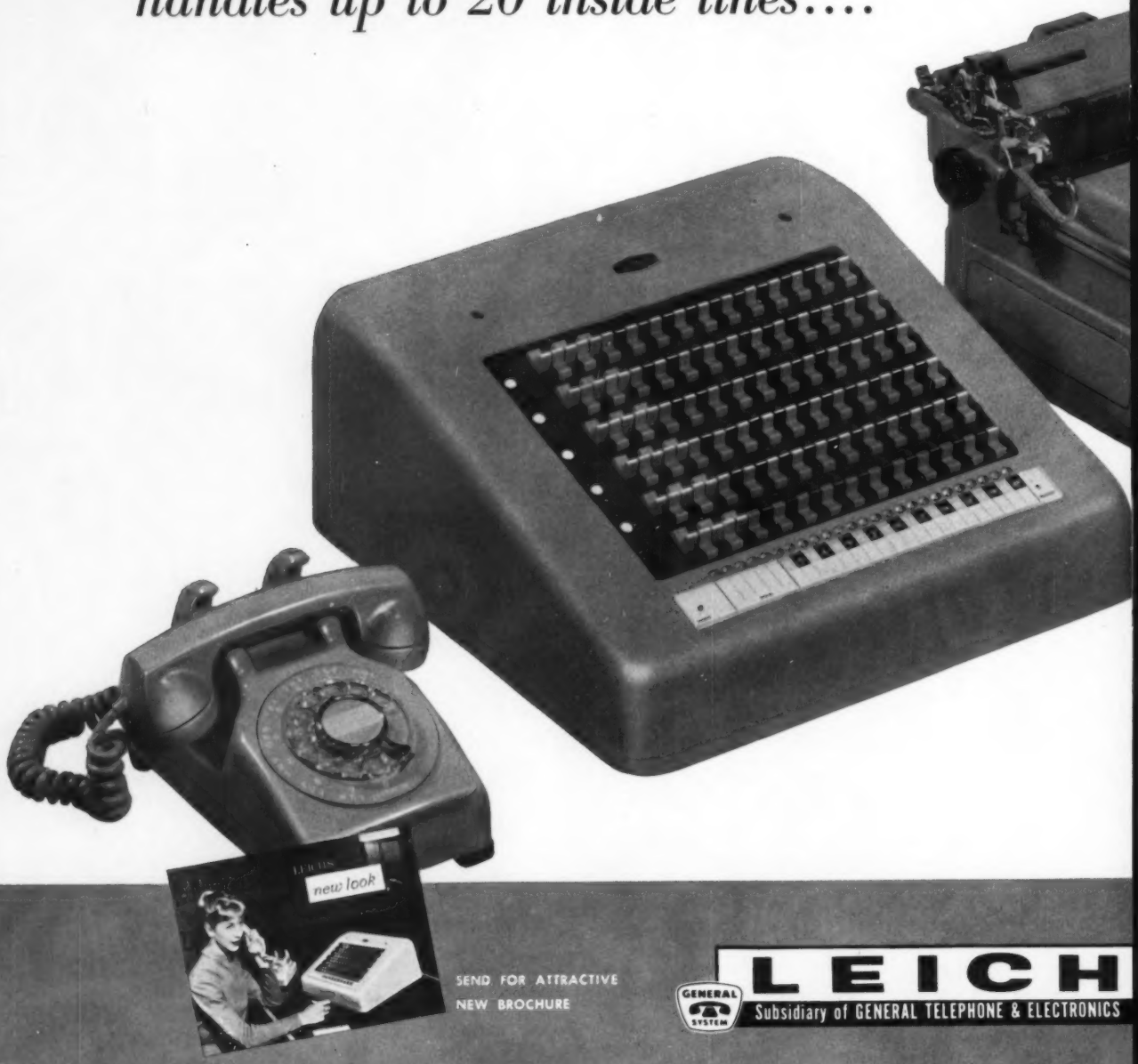

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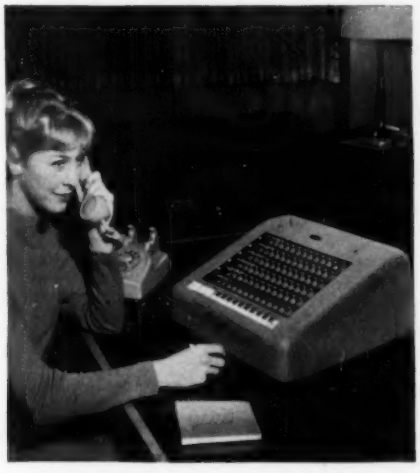
Supervisory lamps show when a party has disconnected, or is signaling. Busy lamps indicate stations and lines in use.



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FLASHES AND PLUGS

"YIELDING PLACE TO THE NEW." Canada's *Department of Transport News* relates a rescue story which sharply delineates the pattern of "the old giving place to the new."

Two men, a lightkeeper and his assistant, at the St. Lawrence's historic Southwest Point lighthouse on Anticosti Island, Quebec, were listening to their small radio-telephone set on Dec. 24, during a gale, when they became aware of smoke. The blaze fanned by a 40-mile-an-hour northwest wind forced the men in eight-below-zero temperature to leave the lighthouse, but in this emergency, the lightkeeper snatched up the radio.

With the set, he called the Marine Radio Station at Ellis Bay, which in turn, contacted the ice-breaker, "Labrador," and the ship, after more than 20 hours in the storm, was able to rescue the two men, at 2 a.m., on Dec. 26.

The fire, which started from an unknown cause in the attic of the lighthouse tower, destroyed most of the interior of the structure, which was erected in 1831. Its history dated back to the days of sailing ships, and according to the *News*, the tower was one of the oldest on the St. Lawrence.

The fire damage may mean the end of the old Southwest Point lighthouse, but its link to modern communication saved the men for duty elsewhere.

•

SAUCE FOR THE GANDER. A young physician was pacing the floor at 4 a.m. trying to get his wailing 2-week-old colicky daughter to sleep.

His telephone rang. Holding the receiver with one hand and putting the baby over his shoulder and out of squalling distance of the caller, he gave the gentleman advice on his problem. However, our doctor friend didn't have much faith in his own suggestions. He must have helped the worried soul though because he didn't call back.

The caller's problem: "Doc, what should I do? I've been up all night with my colicky baby."

•

BATHTUB NEXT. *Television Age* magazine has reported that a man in Atlanta built a tree house for his two sons, aged 13 and 9. The boys insisted that he install a TV set.

He not only put in a TV receiver but he went further and set them up with a telephone, electric lights, radio, two double-deck bunk beds and running water.

With these conveniences in place, the boys are trying to talk their father into installing a heater so that they can stay out on their limb through the winter.

•

ELEPHANT SALE. One reason a great many families don't own an elephant, is that they have never been offered an elephant for $1.00 down and $1.00 a week.

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Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY
Since 1901

October 31, 1959

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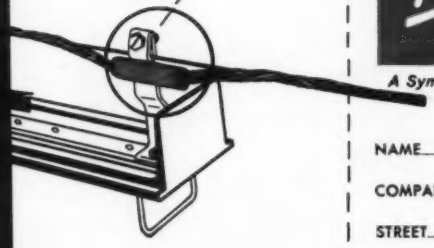

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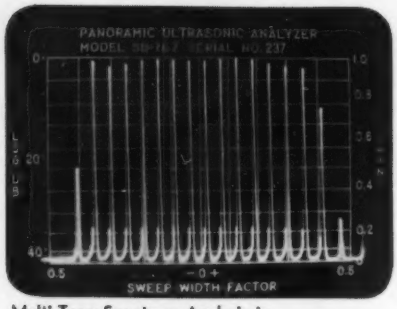

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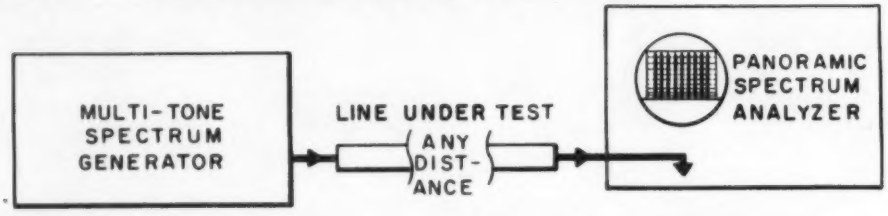

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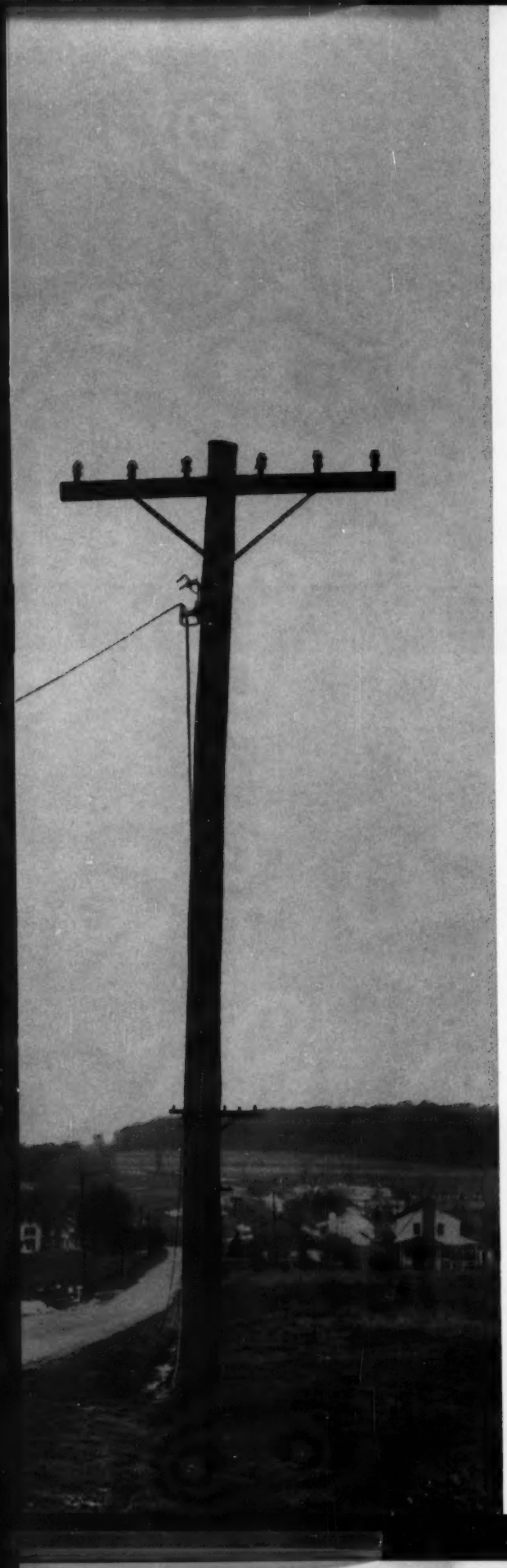

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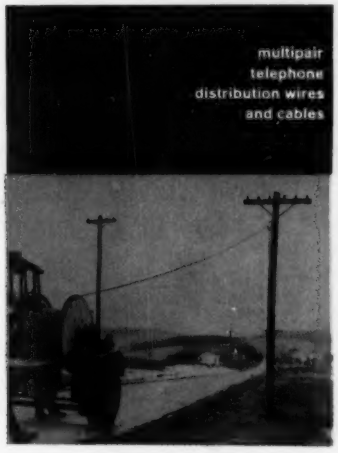

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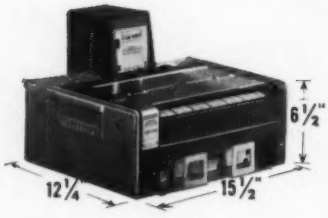

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Trends in Utility Regulation

By FRANCIS X. WELCH, Washington Editor
and Editor of Public Utilities Fortnightly*

FOR PURPOSES of our review of regulation, let us break down the over-all regulatory picture into those trouble spots or areas of movement or controversy—where we can fix our sights on trends which are in the making. For it is in the field of controversy that we will find trends building up—not in the areas of settled or accepted routines and practices.

I would like to touch upon three of these areas of regulatory controversy as they appear today. First, there is that old hardy perennial which some of you may be tired of hearing about so often—the composition of the rate base, whether original cost or present value should be used or something in between. Secondly, there is a relatively recent problem of operating expense regulation, including tax deduction. And, finally, there is the fairly new problem of criticism of commission regulation as an institution, stemming from the activities of the House Legislative Oversight Sub-committee.

Now as to first of these, the composition of the rate base, there have been some changes going on ever since the end of World War II. The general direction has been toward some greater recognition of current value to compensate for inflationary dilution of original cost investment.

It is significant, I think, that where these changes have been made, it has been chiefly by reason of state court decisions based on statutory interpretation. Only in the states of Minnesota and Mississippi have the laws themselves been changed. And, in the state of Maine, the law was changed in the other direction after the highest court had come out in favor of present fair value. Other states where such switching type of decisions have occurred since the end of World War II have been in Alabama, Delaware, Illinois, Iowa (where the cities regulate), Missouri, and New York (for telephone and transit). Court decisions reaffirming earlier fair value rulings have occurred in Indiana, Maryland, Ohio, and Pennsylvania.

Now the question naturally arises, in view of the continued inflationary trends, whether there will be any more switching, any more changes either by statute, or regulatory or court decision, to abandon the cost base where it is still used. And it is still used with variations in about two-thirds of the states.

The answer to that question would seem to depend on the amount of inflation which we will experience in the future. As you accountants well know, there is a very strong predilection on the part of regulatory commissions to cling to the cost base as long as any other way can be found to compensate for inflationary erosion in the earnings of public utility companies. Use of the year-end rate base, some offsetting increase in the percentage of return allowed, more liberal treatment of property under construction or held for future service — all these are devices which have been used to stave off the outright abandonment of the cost base.

Why Commissions Like Cost Base

And, as accountants, you are aware, I am sure, of the reason for this strong regulatory attachment to the cost base. It is because cost is an ascertainable figure, generally accessible through books of record and uniform accounts; and it is because it is not only certain as to amount, but readily susceptible to prove by reliable evidence.

But that is an argument which is based on the convenience of the regulatory procedure rather than the equity of result. I would say that as long as the results can be kept reasonably in line with cost base methods, most of the commissions are going to use them. And by reasonable results, of course, I mean the continued ability of our public utility companies to raise the necessary capital investment to meet their public service obligation in an era of dynamic plant expansion and skyrocketing demand.

But there could come a time, in view of continued or increased inflation, when the commission will no longer be able to shortchange Peter through the rate base in order to pay Paul through the rate of return. Evidently some of the courts in those states I have mentioned have felt that that point had already been reached. I would say that if, when, and where it becomes necessary to start allowing over 8 per cent return on a cost base in order to meet capital cost requirements (and that is not inconceivable in this period of rising money costs), then the political resistance factor, or whatever you want to call it, will start operating in the other direction. Then the commissioners themselves might find it more judicious to keep the rate of return within bounds by expanding the base.

We can prove this proposition very easily by the process of *reductio ad absurdum*. Inflation has destroyed one-fourth of the dollar's purchasing power in the past 10 years. What do you suppose would happen if, in the future, that much of a drop comes in one year, or in three years, or in five years? That is not inconceivable. It has happened before elsewhere, but thank heaven not here. But suppose it did—would there be any court or any commission which would presume to say that a return on a cost base was equitable, under such circumstances? So it all seems to boil down to a question of degree — how much inflation will we have?

---

*Mr. Welch presented this address at the Southeastern Electric Exchange Accounting Conference on Oct. 22 in Washington, D. C.

Of course, whenever we get into this problem about increasing rates to take care of necessary attraction of new capital (as well as dealing fairly with old capital), we come up against that argument which so far seems unanswerable. This is the demonstrable fact that our utilities — gas, electric, and telephone, at least—*have* been able to raise billions and billions through new security offerings, without appearing to be under any handicap because of limitations imposed on earnings through cost base regulation.

That is unquestionably true. But isn't that argument something like saying, "You are still alive; you have not died yet"? Utility credit, over the long run, could become a rather fragile thing. And it could be—as earlier experiences in some foreign countries have shown—you only have to kill it once. The investing public, and I am not talking now about institutional investors who can well take care of themselves, is most patient and optimistic. There is a certain inertia about a blue chip reputation which is awfully hard to kill off. But if the pressure is kept up, the day of reckoning is bound to come, and the worm (no disrespect) will turn, perhaps quite suddenly. We saw that happen already with railroad securities. We see it today with government savings bonds. You may see the investor turn sour tomorrow in your own utility field. Then the question might well be, whether it is too late to do anything about it.

An Old Fallacy Exposed

Now before moving on to the second trend, I would like to comment on what I regard as a common fallacy in this area of rate base control. I refer to the oft-repeated statement that the utility companies have, themselves, switched sides on this rate base argument—now favoring cost, now favoring value. I say categorically that such is not the case and never has been the case. Expressed in terms of a 1947-49 index, the dollar has lost over a fourth of its purchasing power in the last 10 years. But what has happened to it over the past 65 years? Using the same price index (1947-49), the consumer's dollar bought 3⅛ times as much in 1894 as it did 10 years ago. And in all the intervening 65 years, the purchasing power of the dollar showed an increase in only 14 years, usually for small amounts. During the other 51 years there was a steady loss in purchasing power.

Now this bears directly on that old argument about the public utilities and their regulators changing sides several times, on this question of recognizing current value in the rate base for rate-making. If we just consider that constant loss of purchasing power since 1894, we can readily understand that there never has been a period of sustained deflation which would have made it worth while for a public utility company to contend for an original or historical cost base, as opposed to a current value base. It is true that utility companies have sometimes *acquiesced* to the use of a cost rate base, because they knew that the particular regulatory commission was going to use a cost base anyhow. But acquiescence is not the same as advocacy. I never found a case, or heard of a major rate case, in which a utility company actually advocated, or argued in favor of, a cost base in opposition to the contention that a current value base should be used.

Perhaps the way that story about switching sides got started goes all the way back to our old friend, the Smyth *v.* Ames Case in 1898. In that case it is true a Nebraska railroad was contending for a rate based on *capitalization*, whereas, the state, represented by the late William Jennings Bryan, contended for recognition of actual physical value of property used in public service. But I submit that capitalization value, especially in those days of watered stock, and before financial controls or even blue sky laws, was a far different thing from an original cost base derived from provable accounts and records such as we have today.

Reversing Management on Expenses

My second trend, dealing as it does with the area of operating expense, takes us to the next step in regulation beyond the rate base. And it is a most important area, because it bears so much more directly on actual earnings. After all, it takes almost $15 difference in the rate base to make one dollar difference in the return at 7 per cent. In contrast, every single dollar ruled out of the operating expense account is a full dollar deducted from the real return allowed the owners of the public utility property.

Up until a few years ago, there was a tendency for the regulatory authorities to allow utility management considerable discretion in the incurring of expenses regarded as necessary, or even generally desirable, for business reasons. About the only exceptions were cases of undue influence, irregularities, or absence of arm's-length bargaining such as occurred during the old holding company days which have been pretty well corrected.

But in the last few years there has been a tendency toward back-seat driving on the part of regulatory authorities. It had a very small beginning. Some of the commissions began picking away at donations to charities, or contributions to other activities, not clearly connected with operations. And because the amounts involved were relatively small, the public utility companies did not put up much resistance.

More recently at both the regulatory and taxation levels, the increasing tendency to tell management how to spend company funds for business purposes has been on the increase. For years, a rather obscure anti-lobbying provision of the Internal Revenue Act was widely viewed as denying tax deductibility only to outright political and lobbying activity. But now it has been held applicable to contributions to publicity, designed to thwart the encroachment of public ownership in the public utility field. And the Federal Power Commission has likewise ruled that contributions of electric companies to an anti-public ownership advertisement campaign cannot be accounted for as an operating charge.

This does not mean, of course, that utility companies cannot spend their money for such purposes. But it probably means that the owners of the business, rather than the ratepayers, will have to pay for it. Now it ought to be apparent, in this day and age, that electric utilities have been pushed into the area of protective publicity along these lines in sheer self-defense. Advertisements to avoid socialization are actually as much in the nature of self-preservation as fire or burglary insurance, or any other kind of liability protection. In the case of a given company it could actually mean life or death—so that the company has no choice except to spend money for such protective publicity. And that is true whether the charge be made above or below the line. Management would be remiss in its obligation to the owners if it did otherwise.

Where the difficulty will come, if this restrictive trend continues to grow, is that resulting deduction from earnings available for interest and dividends will, like other things I have mentioned earlier, tend in the long-run to make capital more expensive for utilities to raise. And where will this tendency of regulatory authority to pass on managerial judgment as to expenditures end? If a commission can throw out expenditures for reasonable charitable donations, or for protective publicity, it is only a short step to passing judgment on all kinds of advertising expenses. Already we have heard utility critics raise the question of why a utility company should advertise at all, since it has a territorial monopoly. Why, indeed? Why should it build a beautiful

and expensive office building instead of a plain cheap one? Why should it build at all, if there is a short-range saving to be made in renting or leasing? Perhaps I am borrowing trouble, but I think it is not too soon for utility companies to make plans for statutory lines which might be drawn to protect what is left of managerial discretion.

Back-Seat Driving on Tax Elections

We have recently seen this trend toward, what I call, "back-seat driving" by regulators spill over into the controversial area of taking accelerated depreciation for tax purposes. As you know, the state commissions have split up several ways on whether to regard the resulting temporary tax advantages as so-called tax savings or tax deferrals, and on whether to permit the temporary retention of these benefits through so-called normalization or to require a "flow through" of funds to current operations or reserves. Without getting into that problem (and it is a complicated problem) we have seen a "back-seat driving" type of regulation coming to the fore in Maine. There the commission said that if an electric company refused to take advantage of the accelerated depreciation, even if it got no temporary benefit, the commission would treat its operating expenses *as if it had taken such benefits!* No appeal was taken from that decision, and as far as I know it is still the law of Maine.

We had a somewhat similar case in New York State last year when the New York commission hinted that it might adopt a parallel attitude. But Commissioner Eddy later explained, at the convention of New York State Telephone Association last June, that the commission would not try to second guess any utility management which uses its discretionary power of election of depreciation methods under the Internal Revenue Act. What the New York commission intends to practice, apparently, is some sort of profit sharing between the owners and the ratepayers with respect to benefits accrued from accelerated depreciation, but where the management actually decides to use that tax method.

Now this tendency toward "back-seat driving" has been coming along for quite awhile. In telephone rate cases, we see a widespread practice of making a hypothetical assumption as to the ratio of bonded debt to common stocks in order to justify a lower rate of return. State commissions, 20, or even 10, years ago would not have attempted such a revision of managerial decision as to the question of whether the company should finance by bonds or common stock or how much of each.

What can be done about this? Frankly I do not know. Nothing more seems likely to be gained by litigation. The Federal Power Commission has ruled in the case of advertising expenses. The U. S. Supreme Court has ruled on the tax matter in a parallel case. Looks like any further relief will have to come from Congress.

The trouble is that this whole situation is made to order for further political agitation from public ownership quarters. And there is nothing fair or equal in the set-up from this standpoint. There is no question of tax deductibility or regulatory restriction on the vast funds spent by labor unions, cooperatives, or public ownership groups and associations. They do not have to pay income taxes at all and are largely exempt from regulation.

Destructive Attacks on Commissions

Coming finally to the question of commission regulation as an institution, we are now moving into what I believe to be a rather dangerous area of possible reform. Attacks on commission regulation are not new. They have occurred again and again ever since I can remember. As nearly always, when regulatory laws have been changed, they are changed in the direction of expanding the regulatory jurisdiction—giving the commissions more authority over more activities. If you will but reflect on the way in which the regulatory jurisdiction of your own state has grown through the years, you cannot help but agree that such has been the trend to date.

But recently we have some new ideas being thrown around which could work a lot of mischief, not only for the regulatory commissions but for the regulated utilities, as well. I refer to sweeping proposals now pending in Congress to impose upon them rigid rules of court procedure and evidence. Only a few weeks ago a member of the Civil Aeronautics Board (CAB) resigned and sent to the President a 72-page memorandum in which he proposed to do away with the commissions altogether, splitting up their present power in three pieces and handing it around to various administrative agencies of the government.

Actually, I do not expect such laws to be enacted. I feel pretty sure that the House Sub-committee on Legislative Oversight—as now conducted under the reasonable leadership of Rep. Oren Harris of Arkansas—will find a sensible solution with the help of the National Association of Railroad and Utilities Commissioners, the American Bar Association, and others.

But the situation needs caution and care. We must never forget that there are some in this country (not many, it is true) who do not like regulation and never liked regulation precisely because it stands in the way of what they really want, which is the liquidation of private enterprise in the utility business.

So, in the anxiety of Congressmen and others seeking to make commission regulation work better, we must not slip into the trap of destroying it entirely. Granted that this ex-CAB commissioner I referred to had a point in his criticism—that the regulatory commissions work too slowly, or that the commissions and their examiners engage in unnecessary duplication of effort, or that both commissions and their staffs occupy themselves too much with details which might better be left to management. We can agree with such criticism, without embracing a program of correction which could only result in more delay, more complicated and expensive procedure, more duplication of effort, and, worst of all, an end to the guarantee of due process and equitable treatment now assured by existing regulatory processes.

For I can tell you, as surely as I stand here, on the basis of what has happened in one European country after another, and one Latin American country after another, that there is no guarantee of fair treatment, of fair hearing, or reasonable results and right of appeal in *fiat* regulation, under some minister of transport, or minister of fuel such as they have in Great Britain today, which has already socialized its utility services. I can tell you that *fiat* regulation, under ministerial control has always eventually led to socialization, because it is not regulation actually but only a process of liquidation. And if you do think what happened in Britain, or France, or Italy, is too far away, or happened too long ago, you need only look at what is happening under the ministerial direction of Fidel Castro's Cuban government, today, right down in Havana, where the treatment of American investment in utilities has become a scandal.

So, let me end on this plea to support commission regulation, as an institution, to keep it strong, to keep it elastic, and adjustable with all its saving graces of informality and fair treatment. Only in this way have the public utilities in the United States reached the point where their supremacy, in rendering better service to more people than anywhere else in the world is beyond dispute—even in Russia. Commission regulation nourished these utilities to this flourishing and envied position throughout the world. Let us hope we can keep them that way.

Mr. Kappel, in this address before the recent Southern Governors' Conference, told the state executives that business expects and deserves a basic understanding by political leaders that a good profit is essential to enable any company to expand and provide more jobs.

Business Needs Climate to

- Invite Confidence
- Inspire Action

By FREDERICK R. KAPPEL*

GOVERNOR Hodges (North Carolina) indicated that you would probably want me to talk about some of the economic prospects and challenges that are facing the South, as a businessman sees them.

I replied that naturally I would like to make myself useful if I could. It also seemed to me that the best chance for doing that would lie in using plain words about several matters I feel strongly about. Governor Hodges assured me you would want me to express my convictions and that is what I shall do. Please let me emphasize, however, that I have only one purpose in doing so. This is to say something—if I can—that might be of help to you in your great task of leading your states toward increased prosperity.

I have a deep interest in the South and in the problems and opportunities it faces. These are of closest concern to us in the Bell System. We are part of this region and our business and service in all your states are a tremendously important part of our total job. Nearly 155,000 of us live and work here. Here we serve about 8½ million customers, and here, too, live more than 230,000 of our share-owners. Not in any figurative sense, but literally and accurately, your future is our future too. And as we look ahead with you, in each of the member states of this conference, we have one prime concern. This is, and *must* be, to provide service that will make the utmost contribution to each state's forward progress.

Your comment may be that this is the prime duty of telephone people everywhere. I thoroughly agree it is. All across the nation, our goal and obligation are to furnish the best communication system and service it is possible to provide. I emphasize this because my remarks tonight will center around some very practical matters, including dollars and cents, and I would like to make sure that, so far as the Bell System is concerned, the overriding goal of good service is explicit and clear.

Coming back now to your 16 states, I am sure it will be no surprise to you that in this region as a whole, during the last 20 years or so, the growth of the Bell System in service, in the plant we have built, and in the capital we have employed, has been at a rate far exceeding the average for the rest of the country.

I shall be specific. Twenty years ago we served about 2.6 million telephones in your states. Today, the number is about 13 million—five times as many. This compares with an increase of somewhat more than three times in the rest of the country. So you see the rate of growth has been far more rapid here. In fact, it has been more rapid here than in any other region, by a wide margin. This growth has been, if you will, one of the significant indexes or measures of the economic forward march of the South.

Another measure is the dollars invested in physical facilities. Before the war our investment in your states totaled 750 million dollars. Now it is more than 5 billion dollars—nearly seven times as much. And again, this increase has been much greater than in the rest of the nation, where our plant investment has multiplied a little over four times.

This dynamic expansion reflects, as I have indicated, the extraordinary change and progress that have marked the life of the South in the past two decades: *The transition from an economy based largely on agriculture to one that is more and more industrial.* The movement of people away from the farms and into better-paying jobs in

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factories, service industries, and office work of all kinds. The growth of population in metropolitan areas. The remarkable improvement in per capita income.

Moreover the fundamental forces now in motion promise even more change in the future. One such powerful force is population growth. The likelihood is that by 1975—hardly more than 15 years from now—there will be some 60 million more Americans than there are today. Of this total, perhaps 15 million will be here in your states.

Cities Will Have to Grow

And in what sections of the states will they be? On the farms—very few. In metropolitan areas—the great majority. For the mechanization of agriculture is bound to continue also, and as it proceeds there will be fewer and fewer farm workers. In short, as your total population keeps going up, your farm population keeps going down.

This means that willy-nilly, your cities and their suburbs will *have* to grow. It is not a matter of choice. It is a matter of necessity. And to have good cities—flourishing cities—cities in good health economically and socially —you will need to develop and diversify your productive resources far beyond what they are today. You will be called on to expand and expand and expand all the various attributes of an urban, industrial society—school systems, highways, factories, homes, parks, hospitals, libraries, utility services, and all the rest. And, in every case, although some of these things may be provided as state or municipal services, and others by private industry, in every case, I repeat, the ability of the community to create and support all these attributes will depend most of all on the ability of industry to thrive.

Why so? For the simple reason, it seems to me, that there is no other source of wealth that can pay the costs of urban progress. Only industry and commerce can produce the wealth you need, and then only if they are given the opportunity and encouragement to do so.

More Wealth Needed

In the last 20 years, income per capita in the South has more than doubled—taking into account the change in the value of the dollar. This has been a magnificent performance, well ahead of the relative improvement for the United States as a whole. However, per capita income in this region is still well below the national average —some 23 per cent less, for instance, in 1957.

So your need is plain. It is in the word I have already used. Your need is for more wealth. Of course, I don't mean wealth in the sense of a few people sitting on bags of gold. But wealth, just the same. And the one way to get it, in the amount you require, is from industry that will produce goods and services, create markets, provide good jobs, and pay taxes.

Of course, you know this. The chambers of commerce all know it. Your industrial development commissions know it. So you go out and promote what you have to offer, and you have a great deal—Good sites for industry; fine people to work in industry; natural resources; climate; power; transportation facilities; grade-A communications, too. In short, all the attractions you can wrap up in a package to magnetize new industry and pull it your way.

Opportunity to Earn Reward

Now, I fully agree that all these things are important. They are very important. I wouldn't underestimate any of them for one minute. But, I put it to you, gentlemen: In my judgment all these things together are not worth the cost of a single development-commission ad in a business magazine if you fail to offer one thing more. I mean—if you cannot or will not give industry the confidence that, in your state, it will have full and fair opportunity to earn a good reward.

Certainly, it is no part of your responsibility to guarantee reward. No one can do that. No one should even try. It is up to business itself to earn its own reward—by its initiative, its competitive energy, its managerial skill, its zeal to do a first-class job.

I am well aware too that for businesses operating only partially in the South, and competing in nationwide and worldwide markets, many other factors will affect their success, in addition to the political and economic climate they encounter here.

Nevertheless, insofar as they do operate here—invest capital here, sell goods and services here, pay taxes here, and assume all the responsibilities of corporate citizenship here—they expect, and it seems to me you can take it as an axiom that they will always expect, a business climate that will be helpful and not obstructive.

Good Profit Essential

They will look for a basic understanding by political leaders that good profit is essential to enable any company to expand and provide more jobs.

They will look for legislators and executives who think and act on the understanding that *only* profitable business can pay the taxes needed for state services.

They will look for governors and mayors and county and parish managers who genuinely want to see business succeed so that the community can grow in well-being as it grows in numbers.

Moreover, they will look for these attitudes everywhere—South and North, East and West, all over the map. And, wherever a business contemplating expansion goes exploring, just about the first thing it always does is examine the businesses already there.

How are they doing? Do they like it or don't they? Is the answer headaches, or is it hurrahs?

What About Utilities

Also, what about utility services? Are they abundant and good? Are the utilities themselves working in a business climate that encourages them to go ahead? Or are they being held down and held back? After all, the status of the utilities, which are regulated by government, is one of the best barometers of government attitude and political climate.

At the start of this talk I remarked that I would need to speak plainly, and I shall do so now. If my own judgment were sought regarding where to move a business, or expand or start a business, I would have plenty to say in favor of many parts of the South. However, there are a few of your states that I would not feel like recommending. Why this lack of enthusiasm? It is simply because, in these states, our experience in the telephone business has been discouraging. If other businessmen were to have the same kind of experience, I think their reaction would be that government was more interested in curbing enterprise than in expanding it; more interested in preventing or limiting profit than in getting benefits from it; more interested in keeping capital away than in attracting it; more interested in discouraging effort than in stimulating it.

Yet these cannot conceivably be the true attitudes of, let us say, regulatory commissions and their staffs. And I hardly need to say that I know they cannot be your attitudes. I can only conclude, therefore, that in those places where regulated industry is compelled to operate at bare subsistence levels—and they are not all here in the South —we in the industry have failed to gain good understanding by the community of what it takes to serve the community well. The essence of this in my judgment is good profit, and if you will permit me, I should like to name for you briefly some of the reasons why I hold this opinion.

Business Must Have Profit

In the first place, only a profitable business can generate or raise the capital that will enable it to grow, produce more goods, hire more people, and pay improving wages.

Only a profitable business can pay for research and development work to improve its products and services, create new ones, and reduce their cost and price.

Not only is profit a measure of efficiency—good profits actually promote efficiency by enabling a business to plan and invest soundly for the future. Where heavy plant investment is required, the financial ability to engineer and build in the most efficient increments makes possible important economies. Short-range, piece-meal construction, in contrast—when a business is pinched for money—results in higher unit costs and requires more capital in the long-run. This, of course, makes for higher costs of operation and higher prices.

Again, the profit incentive stimulates imagination and the desire to provide better goods or services. If the telephone company, for instance, develops an optional service with special features, people may be willing to pay a premium for it. The test of the market will decide this. If the project is successful, the company may increase its over-all profit. Thus, several gains are accomplished. Customers who elect to buy this optional service get something they want. The company improves its financial situation. Moreover—and most important—the company is encouraged to try another new venture.

Commissions' Role

But, now, let us suppose that just because this little success the company has had has increased its profit, the state commission comes along and orders the company to reduce its profit by cutting its rates. I could give a lot of reasons why I think this is bad, but at the moment I shall give only one: *It has a deadly effect on the desire of people to dream up and work out new improvements.* If the inevitable result of coming out with an attractive new offering is that you run smack into a rate cut—then why make the effort to come out with another? In two words, why bother? And the sure way to wind up with a dull business—of dull people—with a dull future—is to tie the business down so it won't bother to get up.

Now, I have said some rather obvious things here, and it is clear, too, as I mentioned earlier, that business progress and prosperity are essential to support state budgets and all state services.

Why then emphasize the obvious? It is only because—as it seems to me—what is self-evident seems so often to be lost sight of in the complex of affairs. I am simply making a straightforward plea that what *is* self-evident, and so important to *everyone*, should not be lost sight of or forgotten.

Maybe it would help to say it this way: I spoke a few minutes ago of industrial development commissions. I guess by now nearly every state has one. And, in each state government, the development commission occupies a certain corner or niche or pocket—whatever you want to call it. But I ask you, gentlemen, is it a wise or effective thing for this particular branch or arm, or finger, of the state to be straining to attract business, while at the very same time another arm or finger is planning or executing some decision or procedure that will have a precisely contrary effect?

If industrial development is important enough to justify a commission to encourage it, doesn't that mean that it must also be important enough for the whole state to encourage it? Why shouldn't everybody in the government—every department, every commission, every individual, every legislator, every executive—why should not *all* have similar goals? Why isn't the whole state apparatus in effect an industrial development commission?

Present Industry Important

This may be what most or all of you feel you are really shooting for. If it is, I can only say that I think you are absolutely on the right track. And to encourage you further, let me try to give further emphasis to two points.

One is that I hope you will go as far as you can in judging the true value to your economy of the industry you already have. You all know the story of the fellow who searched the world over for diamonds—and finally found acres of them in his own back yard. It seems to me this story has real meaning here. For example, the Bell System, which has been working in your back yards for quite a while, has invested some 4 billion dollars in this 16-state region since the end of World War II. This equals the investment made by—let us say—4,000 million-dollar businesses attracted here by your development commissions.

Or we might imagine 1,300 new businesses (attracted by the commissions) each paying out a million dollars a year for wages and supplies, for local and state taxes, and for services of all kinds. This total too would about equal the billion, two hundred and seventy-five million dollars that the Bell System expended in this region last year.

This is not to suggest that dollars are any substitute for performance. And I'd like to repeat—we in the Bell System are here to labor and serve. Our duty is to invest wisely, to serve well, to charge fairly for our services, to pay good wages, and to spend with prudence. But I do wish to emphasize the point that *what you have now can be just as important as what you may be searching for;* important today, and also important in the future—for we too want to work with you and grow with you in the years to come.

I might say also that I have used my own business as an example because I am familiar with the figures. When we consider the contribution made by regulated industry as a whole—or by any broad segment of industry in the South—or by all industry that is already here—the point is even stronger.

Attracts New Business

The second and related thought I have in mind is this: I believe the attention and encouragement you give to the industry you already have will have a lot to do with the *character* and *quality* of the new industry that comes here or gets born here. Let's take it for granted that what you want in your states is the best. You don't want second or third-rate outfits, fly-by-nights, or anything of that sort. You're trying to establish new assets, not new liabilities. I don't mean that you want only established, seasoned businesses. This country doesn't grow that way. You will want new ventures, too, and people who take new risks. But, in every case, you want human beings of character and ability who really have what it takes to build and operate enterprises that create wealth and make a solid contribution to the community.

These are the very people who, in my judgment, will take the keenest look at what you have here now, and the kind of business climate you offer. Those who can do the most, and contribute the most, will also expect the most. And, the more you have to give them, in full opportunity to earn a proper reward, the more they will surely give the South.

This brings me nearly to the end of my story, but before I conclude I would like to bring out one or two additional thoughts.

It seems to me that in some communities, there is a tendency for people who have lived and worked there for years to think of the coming of a new industry as their private opportunity. I mean, as the new factory goes up outside of town, perhaps the local

(Continued on page 43)

THE Plant Man's Notebook

BY RAY BLAIN, TECHNICAL EDITORIAL DIRECTOR

PLANT MEN who attended the 62nd annual convention of the USITA had another wonderful opportunity to increase their knowledge of communications and to obtain answers to any difficult problems that may have been bothering them. The engineering and plant conferences were both well attended and the papers presented interesting and instructive. It is quite obvious that Independent plant men today all fully realize the importance of maintaining a high standard of service with interruptions reduced to an absolute minimum.

It is a well-known fact that good maintenance of a modern communication system is dependent on the proper use of adequate testing instruments. Testing instruments to meet every need were on display at this meeting and engineers were busy explaining their use. Transmission testing instruments received special attention which indicated that our plant people are all transmission-conscious. Cable testing instruments also came in for their share of attention. It is fully realized that cable trouble must be cleared quickly when it occurs if service interruptions are to be minimized.

Cable pressurization is presently being seriously considered by all plant men. This system, if properly installed and used, prevents cable failures. Two types of dry air systems were on display and their use explained. The paper titled: "Cable Pressurization Methods" presented by L. W. Robello, of the Hawaiian Telephone Co., was of special interest and furnished a wealth of information on this important subject. It is generally agreed that an operating telephone company just cannot afford to be without this type of cable protection.

It is very gratifying to note that outside plant materials, both open wire and cable, are continually being improved. Devices now available, if properly used, have taken most of the difficulties out of cable splicing. There is a general interest at this time in the use of buried cable. Small, inexpensive trenchers are available which prove economical for buried construction where soil conditions permit their use. Moreover, there is a continued increase in the use of carrier and microwave systems. There is little doubt that these systems can be economically used in many instances to up-grade telephone service.

Dial switching systems, as always, received considerable attention. Numerous new equipments were on display and were well received. It is satisfying, too, to note that engineers are keeping up with the demand for better service. Automatic toll ticketing equipment on display attracted considerable attention, all of which clearly indicates that Independents are interested in this service feature. Ticketing equipment has been developed until today it meets all service requirements and at a reasonable cost.

Small electronic switching systems were on display and proved most interesting. There is no doubt that this is the switching system of the future and there are definitely two schools of thought as to when this type of equipment will be commercially available. Some engineers contend that it is just around the corner while others express the opinion that we must make use of electromechanical systems for another 20 years at least. It is believed, however, that some special service transistorized electronic switching systems will be placed in service in the very near future.

The use of automatic dialers is definitely on the increase. By this we mean a device that makes possible pressing a button to dial frequently called numbers. This equipment can be furnished to handle six or more frequently called numbers and should prove a real timesaver for certain types of business concerns.

Paystation service is receiving more consideration today than at any time in the history of Independent telephony. An experimental paystation of a new design was on display. This device is intended to meet the demands for extended area service and short-haul toll calls primarily. Deposit the coins necessary to dial a certain number and the switching equipment permits the call to go through on a dial basis.

About 30 seconds prior to the expiration of the time limit, a read light comes on and the caller may deposit additional coins if he wishes to prolong the conversation. There is also a push-button arrangement which permits signalling the operator in an emergency if a coin is not available. It would appear that a set of this type possesses definite possibilities.

Paystation booths are being constantly improved and made more attractive. The lighting and ventilation of booths make them comfortable for the user. There is even an indication that some day they may be air conditioned when used in hot climates.

There was a new device on display that permits writing over a voice frequency circuit. Write or draw on a sheet of paper on one instrument and it is reproduced on a similar instrument at the other end of the line. This device certainly has many advantages and meets a communication need of long standing for certain special requirements.

Telephones in color are definitely making a big hit. It is reasonable to assume that, for residential use, telephones in black will eventually pass from the picture entirely.

Labor-saving tools are in great demand as they always prove a good investment for all Independent companies. The modern line construction trucks on display clearly indicated their many advantages. Two men and one of these trucks can do more work

than a crew of 10 or more men with tools and methods of yesterday.

This was the first meeting of this association at which one or more dry cell battery manufacturers were not present with an exhibit. No doubt this is an indication that the use of dry cells has been reduced to a point where it would not justify these manufacturers to participate in the meeting. This, then, is just another indication of the changing times.

The annual meeting of the USITA is always a worth-while event. We could say that this year it was bigger and better than ever, but that would just be "old hat." Without question, it was bigger this year inasmuch as there was more equipment on display. In fact, the sixth as well as the fifth floors of the Conrad-Hilton Hotel were just about filled to capacity this year. Perhaps we should say, from a plant man's viewpoint, that it was bigger, better and more interesting and instructive than ever before. This, then, indicates the present rapid growth and expansion of our industry.

•

We think that plastic-insulated and jacketed switchboard cable, now coming into general use, is certainly an improvement over the textile-insulated variety. With this new type of cable, frayed skinners are a thing of the past. The plastic-insulation used on the conductors is of the slow-burning variety that is not affected by the normal soldering operation.

•

It is claimed that the new Army radar is so sensitive that it can identify a tank at 10 miles and pick out a single enemy soldier at a distance of 3 miles.

Further, a "sharp" operator can tell whether the "blip" on his set is a man or woman. The hip movement of a woman is said to betray more "overtones" than the strides of a man.

•

We now have ringing machines, battery chargers and tone generators without moving parts. Now, with electronic switching, we will have complete exchanges without a single moving part.

When telephones are equipped with electronic tone signals instead of the conventional bell their only moving parts will be the switchhook and the dial.

•

We are told that great medical progress has been made in the last generation. What was formerly an itch is now an allergy.

Plant Man's QUIZ

By RAY BLAIN, Technical Editorial Director

Q. We'd like to know what is considered a satisfactory method of automatically controlling obstruction lights on isolated microwave towers?

A. In our opinion, the most satisfactory arrangement is to make use of a photo-electrical panel that automatically turns tower lights on and off in accordance with FCC regulations.

This is considered a more satisfactory arrangement than a clock time switch which, because of power failures, may prove inaccurate.

•

Q. When floor molding must be used to serve a telephone on a desk in the center of the room, what type is recommended?

A. In general, we would recommend that the smallest molding that will meet your needs be used. A metal overfloor duct now available measures only 1-9/16 inches wide and 11/32 inch high.

•

Q. Are there any objections to painting wooden ladders that are used on line construction trucks?

A. Ladders are sometimes painted although it is not, in general, recommended. Paint adds to their weight and may cover a defect that cannot be detected on visual inspection. A better finish is obtained by sanding the ladder to provide a smooth surface and then finishing with a good spar varnish.

•

Q. We wonder whether it will be possible to obtain a split sleeve of the splicing chamber type that will take care of two branch cables from one end?

A. Solid and split sleeves are now available that will meet all cable splicing requirements encountered in new construction, additions to existing plant, and maintenance. This includes straight-through splices, branch splices and three-way splices from either or both ends.

One type of splicing chamber has a capacity of straight-through splices in 2¼-inch diameter cable. Branch splice capacity is 1½ inches, and 1½-inch diameter cable or 1½-inch diameter cable and 1¾-inch diameter cable.

The same sleeve has a three-way splice capacity of 1½-inch diameter cable, 1⅛-inch diameter cable and 1¾-inch diameter cable.

These sleeves are salvageable upon relocation of plant and with the addition of new grommets can be placed in service again.

•

Q. Will it prove desirable and economical to bury plastic directly in the ground without mechanical protection?

A. This practice will prove satisfactory if direct earth burial cable is used. This cable is polyethylene-insulated, fully color coded, and has two polyethylene sheaths.

It also has a 5 mil copper shield as specified in REA PE-23 and IPCEA S-56-434 specifications. A 10 mil copper shield may be provided when additional mechanical protection is considered necessary.

This type of cable is available in 19, 22, 24 and 26 AWG, in 6 through 400 pairs.

•

Q. We would like to know—how many lines can be handled satisfactorily on a cordless PBX switchboard?

A. This type of switchboard is commercially available from one manufacturer in 20, 16 and 12-line capacities with five connecting circuits and five central office trunks.

•

Q. What means may be taken to insure safety of men working in manholes from harm due to deadly gasses?

A. Instruments are available to make tests that will determine the presence of harmful gas.

Perhaps the best safeguard is proper ventilation. Ventilating heaters are available that furnish 300 to 800 cfm fresh air.

In winter, when heating is required, a temperature rise of 10 to 96 degrees may be provided.

BOOKS ABOUT ELECTRONICS

IN RECENT months, we have received numerous requests for information on books pertaining to various phases of electronics. This leads us to believe that it would be helpful and of value to our readers if, occasionally, we devoted the *Electronics Section* to reviews of some of the new and current books dealing with electronics.

Therefore, in this issue, we are presenting below brief reviews of some volumes which we think will be of interest to telephone men.

•

"101 Ways to Use Your Oscilloscope," $2.50; and "101 Ways to Use Your VOM and VTVM," $2.00; both by Robert G. Middleton.

By actual count, these books present a full 101 tests using the named instrument. No words are wasted on theory. Each page contains photos, drawing, or text as required to show the user how to connect up the instrument, and how to interpret the results.

While a great number of examples involve radio or television circuits, this is no disadvantage to the telephone man. The technique for measuring the band pass of a radio amplifier will work just as well on a telephone repeater.

Books like these two are especially to be recommended because they enable the technician to get maximum use from his instruments, even though his understanding of the instruments may be a little vague.

This method of instruction is similar to the method for learning a musical instrument by associating the movement of the hands with the results obtained.

Thus, a person who knows what he is doing with a meter seldom bangs it off scale, because he knows in advance what results to expect, just as a pianist knows what a chord sounds like before he strikes it.

•

"Microwave Transmission Design Data," by Theodore Moreno; $1.50.

This book grew out of a wartime project at Sperry Gyroscope, when the word microwave meant radar.

The book is a revision of an earlier work with things brought up-to-date. Even though classed as a reference volume on the subject of microwaves, it will supply a good education in high frequency techniques to those who read it.

Although a telephone cable pair little resembles a coaxial cable, both are transmission lines, and the chapters here on transmission line theory contain knowledge no radio or telephone man should be without.

It is fortunate this this book has been reissued as a paperback. Books of this sort in hard covers often cost from $10 to $20. Any telephone man who expects to see microwave in his plant would do well to have this book on hand.

•

"Principles of Transistor Circuits," by S. W. Amos; 176 pages; $3.90.

Although this book contains a great number of practical circuit diagrams to illustrate the principles explained, this is not a tinkerer's handbook. Rather, it is for the man who is as interested in knowing what he is doing as he is in getting results.

Aimed at the junior engineer and laboratory technician, the text has a lot of the flavor of the old tube manuals out of which so many radio men got their electronic education.

This book shows how the transistor characteristics are adapted to the circuit at hand, and mathematics to the level of algebra is liberally used. The necessary physics to understand the transistor action is included in the book, but unlike so many other treatments of the same subject, this book does not burden the reader with complicated theories of physics.

•

"Basics of Missile Guidance and Space Techniques," by Marvin Hobbs; 304 pages; two volumes, $3.90 each.

Missile guidance consists of, among other things, getting radio messages of some sort to and from a hurtling rocket, so that the people on the ground can track its path and steer it. At first thought this would seem a little remote from the telephone business, even if it is planned to relay telephone conversations around the world by way of satellite reflectors.

However, there is more than this to concern the telephone man. Not only do some of the signaling and telemetering techniques mentioned here suggest telephone and telegraph signaling, this subject is actually the same thing as data transmission. A wide variety of multiplexing systems exist for placing several channels of intelligence on a single medium. These systems probably started with the harmonic, simplex, composite and multiplex telegraph systems, and have advanced through telephone carriers, to elaborate systems used in radio.

This book has a lot for the telephone man who may have to some day understand data transmission systems. Told in picture-book style, these volumes make the subject easy to understand.

In addition to telemetering techniques, the books have an extra bonus for the technician in the descriptions of servo-mechanisms, and such things as the magnetic core storage memory. (The latter may some day be part of every electronic telephone exchange.)

•

"Low Frequency Amplifiers," by A. Schure; 88 pages; $1.80.

The widespread interest in high fidelity phonograph systems has resulted in intense interest in specific portions of the frequency spectrum. Some of this interest may seem useless, particularly when a hi-fi fan wants to build a system that will transmit frequencies so high nothing but a bat could hear them anyway.

However, on the plus side is the new literature which has become available.

This book is one of a continuing "Electronic Technology Series."

As single subject books, they have the advantage that everything is straight to the point. Although other issues are planned to cover supersonic and subsonic frequencies, this volume on "low" frequency amplifiers, picks as its area, the audible range, which of course puts it right in the telephone repeater field.

While amplifier theory can be learned from many sources, the hardware used at different frequencies varies widely.

This book talks about the type of components that are likely to be used around a telephone exchange, and will take the mystery out of electronics for the man who has to work with telephone type amplifiers.

Again, the advantage is in the single subject handled. Thus the man who hopes to learn how amplifiers are adapted to speech channels, doesn't have to wade through a lot of television theory, or even radio for that matter.

•

"Stereo . . . How It Works," by Herman Burstein, 223 pages; $2.90.

Stereophonic reproduction of sound creates an effect which is nothing short of startling—when it is done right.

However, there is more to it than simply using two loud speakers. This popular author has a knack for making things sound simple and all phases of this subject are thoroughly handled.

However, this is not the telephone man's cup of tea unless he is also a hi-fi fan. It is worth remembering though, that music programs often travel over telephone wires, and time delay on a stereo channel could spoil the results.

Hence the knowledge contained in this book is something somebody in the office should know.

•

"TELEPHONY'S Telephone Traffic Engineering Handbook," by Gilbert R. Brackett; 146 pages; handbook size; $2.50.

It is good to see more electronic books being published which can be of use to telephone men, but it is even better news when a good book directly applicable to the industry comes along.

Probably the largest part of the knowledge that goes into making up the collective intelligence of the telephone business is buried in Bell System literature. While electrical information contained therein can often be obtained from other sources, the subject of telephone traffic is one that only telephone people know about.

The telephone traffic engineer, in addition to an extensive knowledge of equipment, must know how to apply this machinery to the manufacture of the company's single commodity—a telephone call.

To do this he must work with many tangibles and limitations, as would any other kind of engineer, and in addition, he must work with the laws of probability and chance which means he much practically have the use of a crystal ball.

For instance, the average telephone subscriber probably couldn't tell you how many times, or for how long he was going to use the telephone in the next few hours. But the traffic engineer must know how a group of these subscribers will use the service in the hours to come.

Everything in the telephone exchange from the size of the building itself, to the number of operators on duty at any one time, is determined by the traffic engineer.

Yet many smaller companies may not have a full time traffic engineer on duty, and others may have to do the work. Mr. Brackett's book takes a lot of mystery out of the job.

It shows just how traffic studies are made and what factors affect the ultimate decisions. In spite of its title of an engineering handbook, it is not written at an engineering level and any telephone man could put it to immediate use.

The examples chosen involve a small step-by-step exchange, but the basic rules would be applicable to any sort of system.

Every telephone exchange should get a copy of this book while it is still in print. If it isn't needed now,

it will be the next time some equipment has to be added to the plant.

•

"Model Radio Control," by Edward L. Saffors Jr.; 192 pages; $2.65.

This tells how model planes, boats or other vehicles are controlled by radio. It describes construction of the equipment, and shows both vacuum tube and transistor circuits, and coding and decoding equipment. It is of academic interest to the telephone man who would like to learn more about basic electronic control techniques and small scale servo-mechanisms.

•

"Concise Dictionary of Science," by Frank Gaynor; 546 pages; $10.00.

Probably no scientific dictionary will ever be up to date, because as long as inventors continue their work, new words will be made up to describe the results.

However, a scientific dictionary, like a regular dictionary, is probably the most valuable single book anyone can own. This book is of 1959 printing, so it contains most of the electronic words and phrases that are found in today's literature.

However, it is not limited to electronics. All fields of science are covered including such newcomers as radio-chemistry and solid state physics.

The author is the editor of the Encyclopedia of Atomic Energy, and is a science contributor to the Brittanica.

•

"The Properties, Physics, and Design of Semi-conductor Devices," by John N. Shive; 512 pages, 6 x 9; $9.75.

This is another in the Bell Laboratories series and that fact alone almost makes it a must for a telephone library.

This volume puts together in one book a range of semi-conductor devices that previously were treated separately. These include the thermistor, the varistor, the photoelectric cell and the transistor. The first part of the book covers the nature, behavior, and applications of these devices, while the second part goes into the physics of the things.

Illustrations given in the book include practical circuits such as are used in telephone work—expanders, compressors and contact protectors to name a few.

You can buy these books through TELEPHONY.

THINGS TO WRITE FOR

MANY of the best things in life are free, or can be obtained for very little cost. At some conventions many of the exhibitors give away little business advertising gadgets, such as magnifying glasses, letter openers, ball point pens that don't work, and rulers that are too big for your pocket.

Automatic Electric Co., however, has come up with something that a telephone man can use. This company issues a booklet called "Basic Circuits." These circuits show the various ways that telephone relays may be hooked up.

This may not appear to be news to an experienced telephone man, but AE's put some modern names on these circuits which is enough to make any telephone man sit up and take notice.

Now that the telephone and electronic fields have practically merged anyway, the telephone man will see new significance in a relay circuit which is labeled a "pulse stretcher," or a "pulse generator," an "impulse control" or an "information transfer." Indeed seeing how these things are done with relays makes the understanding of their electronic counterparts that much easier.

Incidentally, with this booklet Automatic Electric furnishes a plastic template which can be used by draftsmen to draw relays and other parts of telephone circuits.

If you didn't pick up one of these booklets at the USITA convention, write to Director, Control Equipment Sales, Automatic Electric Co., Northlake, Ill., and ask for Circular Nr. 1927, Basic Circuits.

SYMBOLIC LOGIC

ONCE upon a time telephone circuits were put together on a more or less by-guess and by-gosh basis. That is, different ideas were tried out and experiments made. However, since the computer business has become so intimately associated with the telephone business, a more sophisticated approach is now taken towards circuit design.

Today, use is made of a branch of mathematics known as Boolian algebra. This is the algebra of symbolic logic. It is the application of the art of algebra to facts rather than to numbers. The use of this system permits a circuit to be designed in advance, on a mathematical basis, and then later actually built of wires and contacts. Several books are available on the subject, because the subject is not new. It is only the application of this science which is finding extended use today.

If you would like to know how all of this works and at the same time get a sugar-coated capsule of knowledge as to what computers are all about, write to Eleanor Burns, Sales Department, Computer Control Co., Inc., 983 Concord St., Fram-

ingham, Mass. Ask for a free copy of "Symbolic Logic, Boolian Algebra, and the Design of Digital Systems."

TEST HYBRID

IF YOU followed the articles on the Airtronics portable test hybrid set and program equalizer six months ago, but did not save copies of the articles, you can get reprints by writing to Airtronics International Corp., 6900 West Road 84, Fort Lauderdale, Fla. A package of reprints and some catalog pages are available for the asking.

RECTIFIER NEWS

THE scientific and trade press gives lots of space nowadays to the various sorts of rectifiers which are available. Selenium, germanium and silicon are used to get fantastic ratings out of small elements. New words like thyrode spring into the vocabulary.

Yet much of this press material is skimpy when it comes to details as to how the new apparatus works. Telephone companies are large users of rectifiers and have a keen interest in the latest developments. You can get on a mailing list for "Rectifier News," a bi-monthly publication put out by the International Rectifier Corp., El Segundo, Cal., which will go a long way in filling you in on the latest thing in rectifiers.

TRANSISTOR BOOKS

THIS is the season when manufacturers of transistors bring out new handbooks about their products. Among those you can get right now are the following:

"Entertainment Transistors for Every Design Approach," 32 pages of ratings and characteristics of various types of transistors. Write Sylvania Electric Products, Inc., 1100 Main St., Buffalo 9, N. Y.

•

A new fourth edition of General Electric's transistor handbook has been issued. It contains 227 pages of information on transistors and their use in circuits. Price $1.00 from General Electric Co., Semi-conductor Products Dept., Charles Bldg., Liverpool, N. Y.

•

Another new booklet is "Understanding Transistors," by Milton Kiver. This takes the reader from the basic physics of semiconductor operation up through several practical working circuits. The circuits have all equipment values shown so that they may be copied by the experimenters. Price 50 cents, Allied Radio Corp., 100 N. Western Ave., Chicago 80, Ill.

CATALOGS

THIS also is the time of the year that the mail order houses issue their catalogs. Several companies throughout the country issue these catalogs.

Among the best for telephone use is the one put out by Allied Radio Corp.

This is more than a radio catalog as such. It is complete in its listing of component parts. It is extremely useful to have around a telephone exchange, not only for identifying and ordering electronic parts, but also for heavy goods such as transformers or other items used in telephone gear.

•

Another little publication which is handy around a telephone exchange is a bulletin called "This Month." It is published by Herbach & Rademan, Inc., 1204 Arch St., Philadelphia 7, Pa.

This little periodical is a catalog of surplus items this company has for sale. What makes it different is that sandwiched in with a lot of radar gear, is a fine collection of telephone dials, relays and rotary switches. You can receive this publication free for the asking.

RADIO REGISTRY

THE annual "Official Registry of Common Carrier and Miscellaneous Radio Systems" also has made its appearance.

This is a copy of the official FCC lists of radio stations in the particular category. At other times of the year, different editions of this publication carry lists of other classes of stations.

This particular issue is the one that has the telephone company radio systems. Any company concerned with mobile radio would do well to equip itself with this volume. It is of extreme value in tracking down interference from other stations. Price $3.00, Communication Engineering Book Co., Monterey, Mass.

MICROSWITCH

FOR all of the electronic gadgets you could put up around a plant today, it is probable that none will ever fully replace the ordinary mechanical switch. As a matter of fact, it would appear that the use of switches is increasing rather than decreasing. New ideas for the use of switches are being developed constantly. You can be put on the mailing list for a little publication called "Micro Tips" by writing to Microswitch, a Division of Minneapolis-Honeywell Regulator Co., Freeport, Ill.

TRANSISTOR TEST SET

IF YOU have transistors around your plant, you could probably use a test set which would test the things. You can build a test set yourself very simply from available radio parts.

Write to the Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C. Enclose 50 cents and ask for publication PB 151300, "A Simple Transistor Test Set." You will get a set of directions showing just how such a transistor test set can be built and how to use it. It's worth having.

RAPID SELECTOR

THE National Bureau of Standards has developed an improved model of a high speed document retrieval device. It examines binary coded patterns describing the contents of associated documents. Code and document images are on large reels of 35mm microfilm, which is read by the machine at the rate of 2,400 pages per minute.

Documents selected through code recognition are copied photographically without slowing the film.

Chinese Reds Claim Telephone Progress; ROK-Europe Linked

The Chinese communists claim that they have laid the foundation for an efficient telecommunications network, the North American Newspaper Alliance reported recently.

The Reds stated that at the end of 1958, 500,000 telephones were in use throughout the rural areas of the mainland and "millions of peasants who never saw a telephone up to 10 years ago are using them today."

Peiping claims that all the "people's communes" are now linked by telephone.

They say that since their regime came to power in 1949, the capacity of local telephone exchanges has been raised 230 per cent.

•

In another part of the Orient, facilities necessary for direct telephone and telegram exchange between the Republic of Korea and Europe have been completed, according to Korean Communications Minister Eui Yong Kwak. Hamburg, West Germany, will serve as the central relay station in Europe. Before this, outgoing calls and cables for Europe were relayed at Oakland, Cal.

electronics training...

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Almost everyone admits that the rapid growth of electronics has created problems for telephone men. The skills of yesterday are still important, but they must be augmented with a new skill . . . electronics.

How is your company solving this problem? Specialized resident programs can do the job, but they are expensive. Tuition costs, per diem allowances, transportation and salary for a minimum program can easily add up to $2,000 per man.

If you could invest in a guaranteed program at a small fraction of the above cost, would you be interested? If you could, in addition, keep your personnel in a productive status during the training period, would you be more interested?

No one can have their cake and eat it, but a Cleveland Institute program comes close to just that. Your men receive a solid foundation in electronic fundamentals, plus a Commercial FCC License, and you don't lose their services during the training period.

We would like the opportunity of sending you full details on our plan. Use the coupon below to ask for the free brochure.

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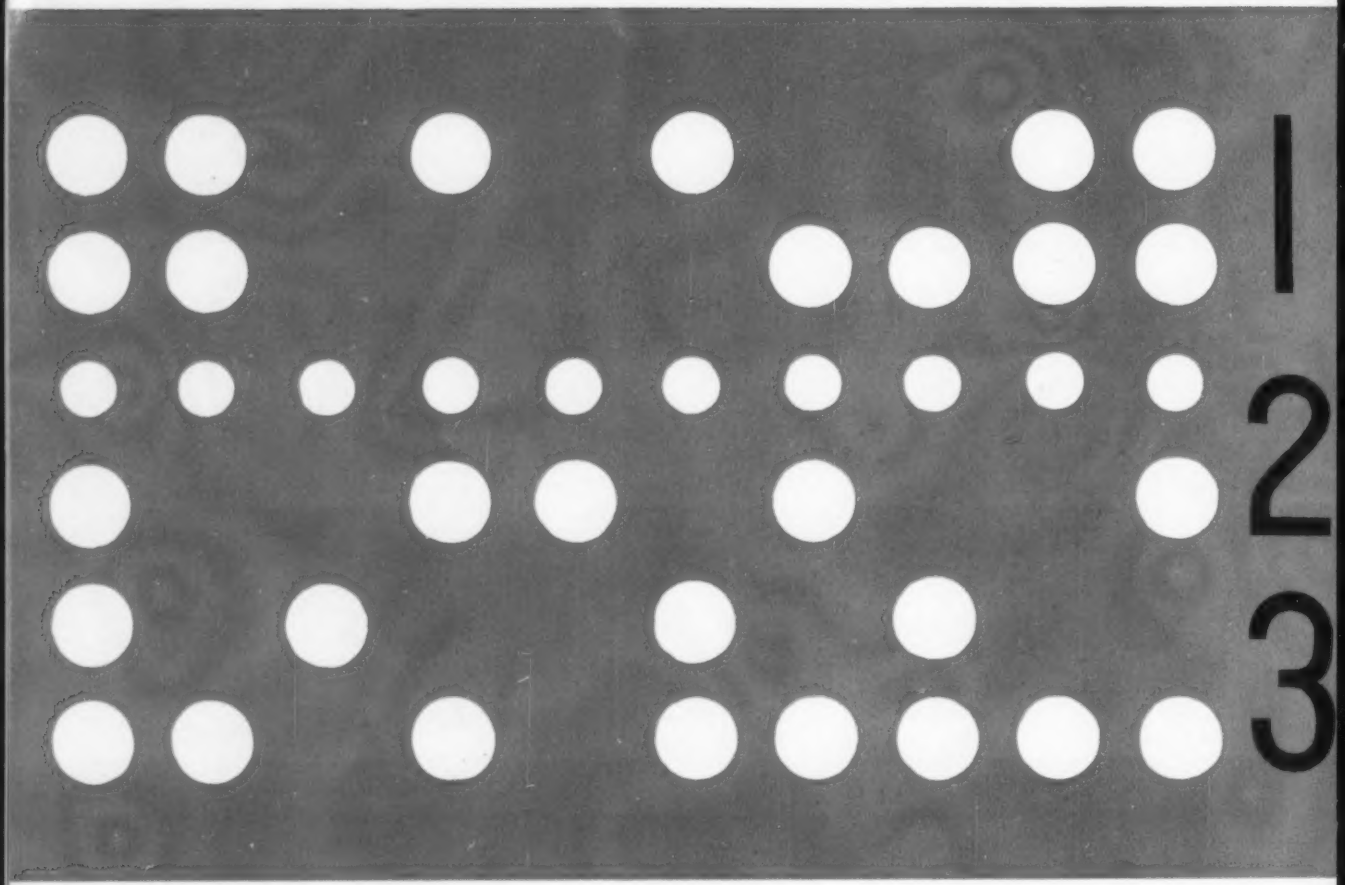

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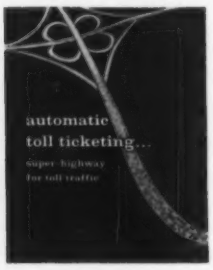

Get the full facts on automatic toll ticketing. This new 8-page booklet explains how you can increase revenue and reduce operating costs with automatic toll ticketing. Explains in simple terms how toll ticketing equipment processes calls. Ask for Circular 1876-A. Write Automatic Electric Sales Corporation, Northlake, Illinois. Or call, Fillmore 5-7111. In Canada, Automatic Electric Sales (Canada) Ltd., 185 Bartley Drive, Toronto 16.

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THROWS OUT INCOMPLETE CALLS BEFORE TAPE IS MADE!

SATT never records incomplete calls. Only completed, billable calls are recorded on tape. This means your equipment is never tied-up recording incompleted call data.

CALL DATA CAN'T BE ERASED!

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GENERAL SYSTEM

The Telephone in the Development of Service Industries

By ALEXANDER I. WARRINGTON*

THE tremendous significance that the service industries continue to have on the people of the United States of North America cannot be properly evaluated, because it is one of the least understood subjects in the general field of economics, particularly industrial economics.

And this is an enormously unfortunate condition which is costing the country sums that probably run into billions of dollars annually. There are many reasons why the people pay out vast sums of monies because knowledge is lacking on the real contribution of the service industries to the economy of the country as a whole. A few of these conditions will be explained.

Services Economic Force

Let us take the field of economic planning which seems to be taking the country with hurricane force. The chamber of commerce, town, state or county that doesn't have some kind of planning commission is the rare exception. When the enormous cost of operating these commissions and departments is taken into full account on one side of the ledger sheet, and results obtained are placed on the other side, the fraction percentage is so low that it is better to forget about it. However, this does not mean that these commissions and departments should be closed down. It does indicate that when the people get a better idea of how their money can be spent productively instead of wastefully, the planning commissions and departments will be doing a more effective job.

The thinking that payrolls and factories are inseparable, with no effective substitute, is a myth that must once and for all be dispelled. No one needs to justify the full significance of factory production and factory payrolls. But, someone needs to take a longer and fuller look at what the service industries are doing and can do for the village, town, hamlet, city or metropolitan area.

Instead of putting on campaigns for the location of manufacturers, commendable as that may be, the manager of one chamber of commerce in Mississippi took a long, hard look at the barber shops in his community, and found them to be so filthy that not a single business man in that area patronized them. They would, instead, drive about 60 miles to the nearest city where they not only spent money on their barbering needs, but would depart with a rather considerable amount of cash spent on other things, all lost to the community with the filthy barber shops. The manager tried to correct the situation with the existing barber shops, but then invited another barber to locate in the community. This move represented a gain to the community of at least $1,000 per week.

Then there is the story about the goose that laid the golden eggs and the sorry end of the poor goose who could have brought so much joy to her owner and those associated with him. In one state of the union, the thinking people are holding their breath because they feel the same thing is going on with one of the most important of all service industries—the telephone business. Madness of this type prevails when the public is misinformed.

The service groups (or utility industries as some economists prefer to call them) have a high degree of intimacy, because most of them deal directly with the consumer. This trend since the beginning of the telephone era has been steadily upward, and this can readily be seen when the time factor is taken into account.

Telephone's Role in Services

We become aware that the television set is not working when it ceases to perform, and the next step is usually to call a repairman. If something goes wrong with the plumbing, we call the plumber. If sickness or death occurs, calls are made on the telephone to report that we cannot report for work, or to summon a doctor, an undertaker or whatever the case may be. In terms of cold economics, these events come under the "time variable" which has been discussed at considerable length in articles already published in TELEPHONY.

In the 500 or more categories of service, there are conditions where the telephone is of no great importance, but such categories are apt to be the exception rather than the rule. For example, most people can get a haircut without resorting to telephone calls, and it may be possible for a woman to visit a beauty parlor without making an appointment in advance. But few people attempt to visit another town without hotel reservations, and the person who calls on the dentist without a prior telephone call is apt to be the rare exception.

This perhaps will suffice to illustrate the high degree of compatibility between the economics of service and telephone communication. And, the fact that we have so many service categories intimately related to our daily lives ought to produce some clue to what the over-all telephone service means to us as individuals and as a nation.

*Mr. Warrington is an Industrial Economist of Baton Rouge, La.

Newspapers and the Telephone

A newspaper without telephone service would be almost in the same position as a boat without oars and with the motor dead. A three-day telephone strike in one community brought this condition most painfully to the attention of the editors. Rural news was discontinued and the heart of the newspaper business—advertising—was drastically curtailed.

When normalcy was resumed, the editor of the classified section of the newspaper gave many hours of thought in analyzing the relationship between telephone service and advertising revenues. The result was a special training session for everybody that had a telephone on his or her desk. The training session consisted, in part, of taking tape recordings of telephone conversations and playing them back. There were many "oohs" and "ahs," but once telephone conversations were taken seriously, the classified advertising revenues increased to offset, many times, the cost of the training which is now standard procedure in the newspaper office under discussion.

It would not be feasible, even in a book, to adequately discuss the 500 service categories under the headings in *Table I.* But since they are grouped under 10 major industrial divisions, some clarification is possible through broad and general summaries. (The reader is at liberty to write TELEPHONY when he feels that articles or parts of articles should be further clarified.)

Here are some questions that have been anticipated on the part of the reader:

(1) What has telephone communication accomplished to increase and promote the efficiency and utility of the service industries enumerated in *Table I*?

(2) Tangible wealth is produced by agriculture, manufacturing, and processing and closely related economic activities. Does tangible wealth come into existence as a result of the service industries?

(3) Is there any reason for believing that the service industries may be profoundly influencing our lives, even though we do not seem to be aware of it?

(4) By not fully understanding the impact of the "service industries" on our daily lives, does it follow that we may be missing excellent opportunities by not properly planning as well as we might be doing?

In the discussions which follow, an effort will be made to clarify the subject matter brought up in the questions. This will be done by adhering to the 10 classifications in *Table I.*

I. Advertising, Publicity and Selling. Before the telephone era began, the service categories in this broad industrial division were of such a low level of activity as to be almost non-existent, when compared to modern standards or those standards where the telephone is an integral part.

In the field of selling, particularly where personal calls are involved, the procedure was formerly left largely to chance with the hope that the prospect would be in and also would be willing to listen to the sales story. Most of this procedure has been replaced with specific calls arranged through the telephone on an appointment basis. In advertising and the whole field of publicity, the most basic resource is the "time variable" which has been thoroughly discussed in previous issues of TELEPHONY.

Advertising, publicity and selling have made enormous contributions in speeding up the productive and distributive processes as a direct result of rapid and instant communication.

The factor of speed is one of the most fundamental agents in the creation of wealth and the income that results from this new wealth. (Some reader is probably saying that this is very interesting, but is this a fact recognized by economists?)

There is strong evidence that economists recognize the truth that rapid communication is an agent in the creation of wealth and income, but the whole subject has been neglected in research and very little information is available in published form. Journals and the published papers read at various economic conferences make strong pleas for such studies and investigations, but, for some reason, the whole field pertaining to the "time variable" in both abstract and applied economics seems to be avoided. Time studies are rather plentiful for various types of production studies, including agriculture, but almost completely lacking in the general field of economic investigation.

II. General Controls and Operations. While the developments in this broad industrial division have been similar to "Advertising, Publicity and Selling," general controls and operations seem to have kidnapped the "time variable" and will settle for nothing less than the speed of light, or perhaps even faster than that, if there is the slightest possibility of exceeding the speed of light.

Today, questions are asked and answered that only a short time ago would have seemed like asking for the moon. Electronic computations have seized the "time variable" and turned hours into seconds, days into minutes, and months into hours.

In previous articles published in TELEPHONY, it was explained how communication brought time into existence which did not previously exist. Now the same principle is confronted which appears to be borrowing time from the future for current use. Impossible as that may sound, we are living in an age when the impossible seems to be routine.

Conditions in the world are changing and have since the Twentieth Century began brought about a new world. We are not capable ourselves of either appreciating or fully comprehending the changes that have taken place in the socio-economic orbit. The world as it is in 1959-1960 will have to be left to future historians; it will be a great deal easier to look back than it is for us to look around and understand the world we inhabit today.

It is not necessary, however, to leave this question to future historians: If, as seems to be the case, we are inhabit-

Some of the Service Industries

I. ***Advertising, Publicity and Selling***—**Approximately 50 important categories can be listed under this division.**

II. ***General Controls and Operations***—**About 50 categories can be listed under this division.**

III. ***Insurance and Real Estate***—**The categories are growing and are now in the neighborhood of 25.**

IV. ***Legal and Financial***—**About 116 categories here.**

V. ***Maintenance and Repairs***—**About 50 categories here.**

VI. ***Research and Planning***—**Almost 80 categories here.**

VII. ***Storage***—**About 20 categories.**

VIII. ***Transportation and Communication***—**About 30 categories.**

IX. ***Miscellaneous Services***—**About 20 categories.**

X. ***Government.***

Table I

ing a new planet, what brought this new planet into existence?

Using more and more of the raw resource of time, through rapid communication, and speeding up calculations are the principal items responsible for bringing years and years of future time to serve us in the present.

III. Insurance and Real Estate. What would be the present state of these huge enterprises if telephone communication suddenly became nonexistent?

While there is no way of proving it, it appears that for every $300 insurance and real estate transaction, at least one telephone call was required.

Insurance and real estate are services that are peculiar to civilized society, and are very strong keys in better understanding levels or standards of living. Insurance and real estate are means used by civilized man for entrenching, securing and perpetuating himself.

IV. Legal and Financial. A substantial portion of the legal and financial structure can be traced back with only minor alterations. However, the time concept of this service division is changing rapidly on a number of fronts. Quick legal counsel and immediate financial assistance are a part of modern society and both are intimately related to rapid communication.

Important as communication is to legal and financial service categories nationally, communication becomes much more pertinent internationally, and this is significant when it is considered that internationally is the way the world is moving today.

V. Maintenance and Repairs. Practically all arrangements in this service division are made by telephone. One of the many indications of this will be found in the Yellow Pages of the telephone directory.

As to heavy equipment, it is extremely sensitive to the time factor because of the heavy investments involved.

VI. Research and Planning. The whole idea of research and planning hinges on the time element. The purpose of research is to bring about today what would probably take place at some indefinite future time, and, in planning, the motivation is to arrange today for what is expected to take place in the future. Research and planning are more or less basic to the whole service pattern.

VII. Storage. Things are usually stored today for use tomorrow. There are, of course, examples of storage actually being a processing procedure. The aging of cheese and wine are examples.

Storage is intimately related to both transportation and communication and a good example of this condition is wharf storage where the timing is often reduced to minutes.

VIII. Transportation and Communication. As to the 30 or more categories that make up this service division, it is clear that transportation and communication, in varying degrees, are responsible for practically all items of service.

The great drama of transportation has been presented again and again to the people, with the results that the vast majority of all people have a deep appreciation of the full meaning of transportation.

Communication has received a great deal of space, insofar as its technical aspects go, but has been sparsely treated in a manner that would bring about more public understanding of how our daily lives are attuned to all phases of modern communication.

In a seaport, such as New Orleans, it has been estimated that for every dollar in circulation in that metropolitan area, 70 cents can be traced back to shipping. The vast shipping economy of New Orleans, one of the truly great ports of the world, is the direct result of rapid communication, mostly via telephone.

It has been asked, what would happen to New Orleans, if the mighty Mississippi River should change its course as it continually threatens to do? Answer: Sudden death would come to that city. And be assured that the death would be just as sudden and just as complete if New Orleans were suddenly deprived of telephone communication.

These examples will illustrate the role of the telephone in both communication and transportation, and a great many more examples will come to the mind of the reader as he thinks along these lines.

The important thing is to thoroughly understand the very delicate balance that exists between these service divisions and the others in this outline.

IX. Miscellaneous Service. Among the 20 or more categories of service in this broad division, new categories are forever appearing and somewhat rapidly. The telephone answering service is probably not the latest in this classification but it is gaining importance. Does the telephone answering service create wealth (in the broad economic sense)?

One such service which operates on the most modest scale is producing business for the subscribers in excess of $45,000 dollars per year. And this business runs the gamut from a mere hobby to a part-time venture. It represents income that would be nearly 100 per cent non-existent were it not for a modest telephone answering service.

X. Government. Before going into this subject, we note a tremendous increase in all levels of government, but a factor that should not be overlooked is that government is becoming increasingly efficient.

Baton Rouge is the capital of Louisiana and has a population in the neighborhood of 150,000. The growth during the past 10 years has brought in writers of national and international reputation, and it seems that every conceivable type of publication has at one time or another carried something about Baton Rouge.

As to the telephone service required, the federal government in Baton Rouge has 66 listings with three switchboards; state government—177 separate listings with 24 switchboards; city-parish government (perhaps the only one of its kind in the entire nation)—72 separate listings with six switchboards.

If almost 300 separate listings and 30 switchboards are required to serve the various levels of government located in Baton Rouge, the balance between government service and telephone service throughout our 50 states and territories becomes apparent, but not completely understandable. The whole subject of telephone service is so complex and so intimate with our minute to minute existence that full appreciation of the economics of rapid communication is probably impossible of attainment. However, no one knows very much about the universe, but only a fool would say that astronomy is a waste of time.

Questions Answered

Before this article is closed out, there were four questions asked earlier and they are discussed below:

Discussion of Question No. 1. The so-called service industries *are economic means of production.* Goods are produced fully and completely but the goods produced are often intangible. Service rendered *is a creative process.*

The birth of modern service took place with the birth of the telephone era. If (A), modern service, and (B), the telephone era, were plotted on a graph, and simplified for comparison, we would have two parallel lines at about 45 degrees.

The telephone has supplied the needs of a rapidly increasing demand for many different types of service and thus the demand for and supply of service have continued to grow in balance.

(Continued on page 43)

Michiganders in 24th Convention Chronicle Seven "Firsts"

By CHARLES D. McLELLAN*

"FIRSTS" highlighted the 24th anniversary convention of the Michigan Independent Telephone Association on Sept. 15-17.

Among the "firsts" was the keynote address by Hugh A. Barnhart, which marked the initial appearance of a president of the United States Independent Telephone Association on a Michigan convention program. Mr. Barnhart is the immediate past president of the USITA.

The address by Norman McFarlin, assistant administrator of REA, was the first time Michigan Independents have heard an REA representative. Russell Schafer, president of the Pinconning (Mich.) Telephone Co., attended the convention as the first Michigander in history to be a member of the USITA board of directors (he was elected a director in 1958). Sharing the speaking program in his first address to the Independents was Tom Burns, junior member of the Michigan Public Service Commission. The association, for the first time, set aside an entire day for delegates to visit with suppliers without conflicting meetings. It proved to be a successful innovation. Also a "first" were two workshops, geared primarily to the interests of plant personnel, which drew many favorable comments from the largest group ever attending a Michigan convention. The election of L. W. Reynolds, president of the Ontonagon (Mich.) Telephone Co., as the association's President for its Silver Anniversary year rounded out the "firsts," for Ontonagon was the town in which Michigan's first telephone lines were built in 1875.

Reviewing the signs of the times that point to phenomenal growth in the Independent industry, USITA President Barnhart urged his listeners to be prepared to meet the challenge of the next decade by taking steps now to successfully meet the expansion. He pointed to the desirability of smaller companies merging their interests in contiguous territories as a means of developing more efficient and profitable operations. He suggested that the merg-

*Mr. McLellan is executive secretary of the Michigan Independent Telephone Association.

LEFT PHOTO: Official trio at the convention includes C. Reginald Smith (left) of Port Hope, retiring president of the Michigan Independent Telephone Association; and Hugh A. Barnhart (right), immediate past president of the United States Independent Telephone Association, offering congratulations to the president-elect, L. W. Reynolds, of Ontonagon. RIGHT PHOTO, left to right, Roy Putnam of Muskegon; C. D. McLellan, executive secretary of the Michigan association; P. E. Taylor of Pickford; and R. H. Burfeind of Chicago, Ill.

ing companies could staff themselves with more highly skilled personnel that will be necessary to keep pace in the rapidly moving electronic age and still maintain their essential identity. He urged telephone companes to explore the possibility of making the USITA sponsored Telephone Engineering Conference held at Michigan State University available to greater numbers of key personnel as a means of meeting the challenge of the future.

Mr. McFarlin addressed the convention on "Opportunity and Progress" and shared his operating experiences in the Independent field. His observation that all the base rate subscribers of the Montezuma (Ia.) Telephone Co., which he and his father have operated for many years, are rendered single-party service impressed the audience.

Commissioner Burns commended the Independents on the outstanding post-war modernization of their segment of the Industry and urged continued concern in providing high grade service in the public interest.

C. Reginald Smith of Port Hope, president of the Michigan association, who presided at the general sessions presented a report of the association's activities during the past year. Highlights of his report showed that the trend of smaller companies in merging their interests has resulted in a total of 103 Independent companies in Michigan. With the addition of five more companies during the year, 87 per cent of all Michigan companies are now members of the association. These companies represented 95 per cent of all the Independent telephones in the state. During the year, Independents realized a station growth of 4.9 per cent with 15,000 new installations, he reported.

Officers and directors of the Michigan Independent Telephone Association. Seated, left to right, are: K. B. Sage, of Central Lake; R. J. Schafer, of Pinconning; L. W. Reynolds, of Ontonagon; C. Reginald Smith, of Port Hope; K. W. Benckert, of Muskegon; and P. E. Taylor of Pickford. Standing, left to right, are: newly elected director A. M. Spry of Howard City; E. L. Cadwell, of Levering; John Collver of Climax; D. K. Carlson, of Morenci; and J. R. Fox, of Waldron. Absent when picture was taken were A. H. Nickless, of Millington; and John L. Sattler, of Cedar.

Afternoon workshop sessions were highlighted by a half-hour movie of an actual buried plant operation, taken by Lyle McGowan, manager of the Lawrence (Mich.) Telephone Company. The picture-story proved an excellent introduction to the discussion of buried vs. aerial plant.

Implementing the film was an explanation of practical experiences, given by a panel of "experts" which included Jerry Junkers of General Telephone Co. of Michigan; Louis Eggleton and Bernard Cotton of Michigan Bell Telephone Co., Grand Rapids; Marvin Anderson of Carl C. Crane Co., Madison, Wis.; Vernon Freeman, REA field engineer of Macon, Mo.; and Bucky Harris of Harris-McBurney Co., Jackson, Mich.

Tracing of open circuits in rural distribution wire (RDW) was one of the key points of the workshop on "RDW Practices and Problems" conducted by Joe Stravers, manager of Calhoun County Telephone Company of Homer, Mich. Discussion of the merits of puncture-probing versus use of the Wheatstone Bridge and tracer tone was keen, and was finally resolved on the basis that whatever methods are used, it was entirely dependent upon the skill and reliability of the tester. Mr. Stravers was assisted by the following men: Louis VanDenBerge, manager of

(Continued on page 44)

LEFT PHOTO: Intent group exchanging views pertinent to workshop sessions at the Michigan convention includes (left to right) Joe Stravers of Homer, who served as chairman of the workshop on Rural Distribution Wire (RDW); and Louis VanDenBerge, of Borculo, who assisted Mr. Stravers; with Marvin Tinholt and Glen Garrison of the Daverman Engineers; and at right, R. L. McGowan, of Lawrence, chairman of the workshop session on Buried Plant. RIGHT PHOTO, left to right, Jack Baker of Port Hope; Jack Bell of Caro; Mrs. Medford Sattler and Mr. Sattler of Cedar; Harry Parcell of Caro; and Frances Stafford of Port Hope.

Merchandise and Mark Sense, Tennesseans Advised

*By Cecil H. Thomas**

THE Tennessee Telephone Association held its 25th annual meeting in Nashville on Sept. 8, 9 and 10. Over 250 delegates representing 33 of the state's 54 telephone companies, attended.

A high point of the convention was an after-dinner speech by Tennessee's Governor Buford Ellington. Serving his first year in office, the governor has already become noted for his encouragement of the state's industrial expansion. In fact, Tennessee's industrial growth will set a record this year. The governor told telephone representatives that their organizations "are playing a vital part in the industrial development of the state of Tennessee."

In their opening session, delegates heard an address by David A. Hamil, REA administrator. He praised Tennessee telephone companies for their cooperation in providing service to the state, and cited the progress made by telephone companies that had borrowed from REA.

Hammond Fowler, chairman of the Tennessee Public Service Commission, also spoke to the association. "The work of all Tennessee telephone companies," he said, "is making a better life for Tennesseans." He then said that the function of the Tennessee commission is to see that telephone companies are neither starved by inadequate earnings nor given earnings that are unjustifiably high.

Delegates spent a major portion of their time listening to representatives of the telephone industry speak on various phases of the business. R. Parker Sullivan, vice president of General Telephone & Electronics Corp., discussed merchandising. "There is nothing magical about merchandising," he told the group. "Its benefits are not attainable by any sleight of hand, or mirror trick, but rather it requires acceptance and application of a new business attitude, one that is based on the conviction that maximum profit dollars can be realized only when the customer is given complete service and to his complete satisfaction. There also must be a willingness to make the changes necessary."

He then reviewed what General Telephone had done in merchandising, what it had learned from these experiences and how the company was relating these experiences to its present and future merchandising plans.

W. R. Jarmon, vice president of General Telephone & Electronics Corp., whose subject was "Your Toll Business," reviewed the progress and growth of long distance service during the past 25 years and highlighted what may be expected during the next two decades. "Today, toll is big business and the most rapidly growing service of each and every telephone operator throughout the country," he told the group. "Profit potentials are great if all of us meet the complete communi-

*Mr. Thomas is General Commercial Manager of Inter-Mountain Telephone Co. and Publicity Director of the Tennessee Telephone Association.

R. Parker Sullivan (left), vice president, marketing and sales, General Telephone & Electronics Corp., and H. J. Kleinhammer, general traffic manager, Inter-Mountain Telephone Co., at the speakers table during the convention.

Officers and directors of the Tennessee Telephone Association for the year 1959-60 are (left to right): E. D. Hildreth, president; Randel S. Burns, director; N. V. Ferguson, first vice president; Ralph Thorne, director; John E. Sexton, second vice president; Wilbur Shell, director; William S. Slusher, immediate past president and director; Sam Anderson, director; J. M. Tuggle, director; Cecil H. Thomas, publicity director and M. V. Williams, third vice president.

cations needs of our customers for *both* local and toll calling."

H. J. Kleinhammer, general traffic manager of Inter-Mountain Telephone Co., whose subject was "Traffic Problems," discussed the use of mark sense toll tickets and the progress being made in operator toll dialing and Direct Distance Dialing (DDD) in Tennessee.

Mr. Kleinhammer used color slides taken in a Tennessee toll center to illustrate how toll tickets are being "mark sensed" by the operator and then rated and billed by machine. He pointed out that present plans are for all Southern Bell Telephone & Telegraph Co. and many Independent toll centers to be converted to "mark sensing" operation by the fall of 1960.

New association officers, elected at the convention for the coming year are: President, E. D. Hildreth, DeKalb Telephone Cooperative; first vice president, N. V. Ferguson, West Tennessee Telephone Co.; second vice president, John E. Sexton, Inter-Mountain Telephone Co., and third vice president, M. V. Williams, Crockett Telephone Co. W. S. Howard, Millington Telephone Co., was re-elected secretary-treasurer.. William S. Slusher, Ben Lomand Rural Telephone Cooperative, Inc., is past president.

West Virginians Hold Eighth Annual Meeting

ATTENDANCE by 154 members and guests sparked the eighth annual convention of the West Virginia Telephone Association in Davis on Sept. 22 through Sept. 24.

Robert W. Ingle of St. Marys presided.

David A. Hamil, administrator of the Rural Electrification Administration, spoke at a luncheon meeting on the "Purposes and Practices of REA."

An illustrated talk on "Mark Sensing Toll Tickets" was given by Charles Jordin of the Chesapeake & Potomac Telephone Co.

The ladies took a bus tour of the area while a golf party was being held at the Elkins Country Club.

The convention closed with a banquet and entertainment.

Directors elected are: James C. Crane of Masontown, D. D. McCardle of Cameron, D. C. Dodrill of Morgantown, Murrill Colburn of Export, Pa., John L. Fordyce of Charlestown, LeRoy N. Darling of St. Marys, W. Murray Smith of Clay, Mr. Ingle and Nyle Scholl of Bluefield.

Officers are: President, Mr. Crane; first vice president, Mr. Dodrill; second vice president, Mr. Colburn, and secretary-treasurer, Mr. Darling.

Business Supports Higher Education

One of the happy developments of the times, states a recent *Industrial News Review*, has been industry's increasing support of higher education in the United States.

Gifts from corporations to our colleges and universities totaled 40 million dollars in 1953. They came to 136 million dollars last year. And the 1959 total is expected to reach 150 million dollars.

The American Economic Foundation gives several reasons why corporations feel more and more responsibility toward higher education.

For one thing, business needs the trained manpower thus produced.

For another, corporation officers want to preserve and nourish the traditional American ideal of educational opportunity.

Still a third factor must also play a big role in framing the attitude of business. That is the desire to keep education out of the hands of federal bureaucrats —who would call the tune if the colleges and universities were supported with federal money.

Keeping education free of political dictation is the most important need of all.

Officers and directors of the West Virginia Telephone Association are shown, first row, left to right: D. D. McCardle of Cameron; D. C. Dodrill of Morgantown, first vice president; James C. Crane of Masontown, president; Murrill Colburn of Export, Pa., second vice president, and John L. Fordyce of Charlestown. Second row, left to right: LeRoy N. Darling of St. Marys, secretary-treasurer; W. Murray Smith of Clay; Robert W. Ingle of St. Marys, and Nyle Scholl of Bluefield.

George A. Hearne, Pioneer association director, presents the certificate of appreciation to W. F. Miller of Des Moines, Ia., for his service as president of the association during the past year.

Independent Pioneers Hold Annual Meeting

THE 10,000th member of the Independent Telephone Pioneer Association was enrolled during the past year, it was reported by the association's executive secretary-treasurer, Mayme Workman, at the organization's annual meeting, held on Oct. 13 during the annual convention of the United States Independent Telephone Association in Chicago.

Association President W. F. Miller of Des Moines, Ia., presided over the meeting.

Mrs. Workman reported that the 10,000th member is Mrs. May H. Bernard of the Conestoga Telephone & Telegraph Co. of Douglassville, Pa.

In her annual report, Mrs. Workman stated that, as of Sept. 30, the association had 4,728 members classified as follows: Direct, 1,163; chapter, 2,815; club, 177; associate, 189; auxiliary (wives and husbands of pioneer members), 74, and life members, 242.

Mrs. Workman also announced the formation of the Gus Lane Chapter of Arkansas which was formed during the past year.

Among the resolutions adopted by the Pioneers was one expressing their appreciation of the publicity and support which has been given to the association by TELEPHONY and Telephone Engineer; one paying tribute to Secretary-Treasurer Workman for the contributions she has made to the association during the 12 years she has served the organization in that capacity, and one commemorating the deaths of Pioneers during the past 12 months. Those Pioneers whose deaths have been reported include:

H. M. Adams of Brownfield, Tex.; J. H. Agee of Menlo Park, Cal.; W. E. Benscoter of Huntington Mills, Pa.; L. Lucille Bingham of Brocton, N. Y.; F. A. Blockwitz of Lincoln, Neb.; L. G. Blystone of Cambridge Springs, Pa.; W. R. Brown of Lafayette, Ind.; M. L. Clouser of Thornton, Ind.; F. W. Cory of Newton Falls, O.; Irene S. Fuller of Jamestown, N. Y.

C. H. Galloway Sr. of Winter Park, Fla.; G. K. Gann of Pebble Beach, Cal.; Hazel Hagenbuck of Wahoo, Neb.; G. W. Hansen of Lincoln, Neb.; W. L. Hassler of Lincoln, Neb.; A. E. Henry of Princeton, Ill.; Fred Heyer of Dixon, Ill.; Gustav Hirsch of Columbus, O.; G. R. Hughes of Shell Rock, Ia.; Lottie M. Hunscher of Ashtabula, O.

Lillian B. Jarvis of Girard, O.; L. H. Jenks of Carthage, N. Y.; J. P. Keane of Pine Island, Minn.; F. A. Kessler of Los Angeles, Cal.; Lucy K. King of Newark, O.; J. D. Kratz Sr. of Footville, Wis.; G. E. Krieger of Everett, Wash.; J. E. Lainhart of Hampton, Ia.; J. L. Lantz of Ada, O.; Lillian M. Lawson of Jamestown, N. Y.

J. M. Lenz of Chicago, Ill.; F. C. Lickteig of Corunna, Mich.; M. C. Livingston of Atlanta, Ga.; J. L. Loman of Lafayette, Ind.; S. V. Lyons of Mission, Kan.; L. B. Mapel of Brea, Cal.; J. F. McConnell of Watrous, Pa.; O. E.

Officers and directors of the Independent Telephone Pioneer association, Left to right: Mayme Workman, Springfield, Ill., executive secretary-treasurer; K. L. Lawson, Lincoln, Neb.; D. S. Guild of Honolulu, T. H.; Sophia K. Davis of Springfield, Ill., assistant secretary-treasurer; Berney Simner of St. Louis, Mo., president; G. A. Hearne of Kansas City, Mo.; W. F. Miller of Des Moines, Ia., and F. H. MacGougan of Monrovia, Cal., vice president.

Metcalf of Monette, Ark.; Mayme Midgley of Jamestown, N. Y.; Mary D. Miller of Jamestown, N. Y.

S. F. Nixon Sr. of Westfield, N. Y.; J. G. Odegard of Bedford, Va.; Mrs. T. D. Owen of Ottsville, Pa.; E. S. Parsons of Menomonee Falls, Wis.; A. R. Patterson of Streator, Ill.; E. L. Peck of Elgin, Ill.; J. R. Porter of Tarboro, N. C.; J. W. Pusey of Erie, Pa.; Elizabeth Reed of Madrid, Ia.; N. W. Rice of Ironton, Mo.

J. W. Richmond of Avon Park, Fla.; O. R. Roach of Ft. Smith, Ark.; Henry Roberts of Cochranton, Pa.; J. L. Rose of Kansas City, Mo.; A. M. Ruhl of Wabash, Ind.; Charles F. Sanders of Waterloo, Ill.; Olive A. Serven of West Lebanon, N. Y.; S. M. Sherman of Los Altos, Cal.; S. H. Shutt of Sherman, Tex.; A. B. Smith of Evanston, Ill.

H. C. Smith of Lincoln, Neb.; Oura L. Smith of Seward, Neb.; R. W. Smith of Chicago, Ill.; W. H. Snaith of Rhinelander, Wis.; Leolynn Sneed of Keytesville, Mo.; J. O. Tidd of Maryville, Mo.; W. W. Weedfall of Dallas, Tex., and W. T. Wheeler of St. Louis, Mo.

The Pioneers elected three new directors: Hugh A. Barnhart of Rochester, Ind.; Bertha B. Eaby of Ephrata, Pa., and C. E. McCormick of Johnstown, N. Y.

Other directors are: R. J. Alter of Galesburg, Ill.; D. S. Guild of Honolulu, T. H.; G. A. Hearne of Kansas City, Mo.; K. L. Lawson of Lincoln, Neb.; F. H. MacGougan of Monrovia, Cal., and Berney Simner of St. Louis, Mo.

The directors elected the following officers: President, Mr. Simner; vice presidents, Mr. Lawson and Mr. MacGougan; executive secretary-treasurer, Mrs. Workman, and assistant secretary-treasurer, Sophia K. Davis of Springfield, Ill.

The Pioneers also elected the following as members of the association's advisory committee: H. E. Bucher of Tucson, Ariz.; L. J. Sevestre of Macon, Ga.; W. H. Chance of Mayville, N. D.; Emma Blake of Frederick, Okla.; W. G. Mumaw of Aberdeen, Wash.; W. N. Schell of Bluefield, W. Va.; Alta A. Wilson of Fredonia, N. Y.; Martha M. Merz of Seward, Neb.; J. F. Cushing of Sitka, Alaska; Mary S. Connolly of Rock Hill, S. C.; Thora M. Kalie of Erie, Pa.; M. G. Baker of Springfield, Vt.; A. C. Kelley of Summit, N. J., and C. C. Chandler of Cherokee Falls, Mass.

REA Authorizes Nine Loans Totaling $4,661,000

NEARLY 5,600 subscribers in six states will receive new or improved telephone service with the aid of nine loans approved during the week of Oct. 12 by the Rural Electrification Administration as follows:

Reno Telephone Association, Inc., Hutchinson, Kan.; $805,000; Oct. 13.

This loan will help the borrower to improve service for 949 subscribers and to furnish initial service to 209 subscribers.

The borrower has recently acquired the facilities of the Americus Telephone Co. and the Durham exchange of the United Telephone Co. of Kansas, Inc. The loan reimburses the borrower for these acquisitions. Funds are also provided to enable the borrower to acquire the Gridley Telephone Co. and the Lehigh Telephone Co., and for converting to dial the Walton exchange formerly operated by the Central Kansas Telephone Co., Inc.

New dial central offices will be constructed to replace existing magneto facilities at Americus, Durham, Gridley, Lehigh and Walton. A combination garage and storage building will be built at Partridge. REA loans to this borrower now total $2,619,000. Upon completion of its system the Reno association will be operating 17 exchanges, providing service to a total of 4,305 subscribers. Ten of the exchanges have been cut over to dial.

B. R. Anderson is president and Douglas Wright is manager of the Reno association.

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Peoples Rural Telephone Cooperative Corp., McKee, Ky.; $551,000; Oct. 13.

These funds will enable the borrower to provide initial service to 873 subscribers. A small portion of the funds will be used to complete the authorized system.

REA loans to this cooperative now total $1,312,000 which will aid in providing new and improved service to 2,400 subscribers. Approximately 1,300 subscribers are now receiving dial service through the system's four exchanges.

Pleas Turner is president and Vee Gay is manager of the Peoples cooperative.

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Shiawassee Telephone Co., Perry, Mich.; $210,000; Oct. 13.

These funds will enable the borrower to improve service for 249 subscribers and furnish initial service to 146 subscribers. The subscribers who will get improved service are now receiving magneto service over the Locke Mutual Telephone Corp. facilities which the borrower acquired late in 1958. Funds are provided in this loan to reimburse the borrower for this acquisition.

A new dial central office will be constructed at Belle Oak. REA loans to the Shiawassee borrower now total $792,000, which will benefit 1,821 subscribers. The completed system will consist of two exchanges. The Perry exchange now provides dial service to approximately 1,030 subscribers.

Russell Brandt is president and William C. Schmidt is manager of the Shiawassee company.

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Reservation Mutual Aid Corp., Parshall, N. D.; $220,000; Oct. 13.

This loan will help to finance initial service for 319 subscribers in the borrower's Newtown exchange. Initial service will also be extended to 60 subscribers, and improved service to nine existing subscribers, in the Ross exchange.

In order to furnish this additional service, the borrower proposes to replace the present dial facilities in Newtown with a new and larger central office building which will house garage facilities.

REA loans to this cooperative now total $2,873,000 which will enable it to furnish new and improved service to 3,489 subscribers. The completed system will consist of 13 exchanges. Twelve are now furnishing dial service to approximately 2,400 subscribers.

Donnell Haugen is president and Fred W. Ahlgren is manager of the Reservation Mutual corporation.

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XIT Rural Telephone Cooperative, Dalhart, Tex.; $159,000; Oct. 13.

These and funds from a prior loan will enable the borrower to furnish initial service to 104 subscribers and improve service for 15 subscribers.

In order to provide this additional service, the borrower plans to construct a new dial central office in the Kerrick vicinity. REA loans to this borrower now total $702,000 which will make possible new and improved service to 608 subscribers.

R. C. Buckles is president and R. L. Elliott is manager of the XIT cooperative.

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Triangle Telephone Cooperative As-

NEW MOTOROLA PUSHBUTTON RADIOTELEPHONE

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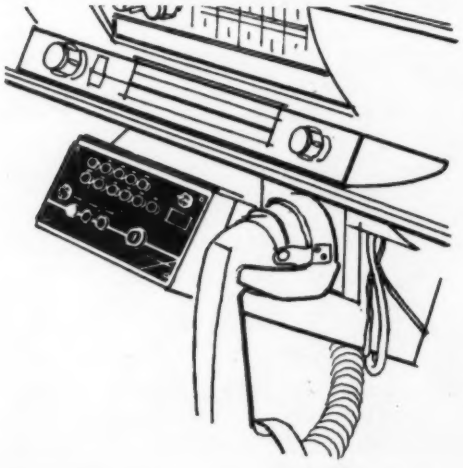

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MOTOROLA PUSHBUTTON RADIOTELEPHONE

Motorola Communications & Electronics, Inc., 4501 Augusta Blvd., Chicago 51, Ill., A Subsidiary of Motorola Inc.

sociation, Havre, Mont.; $898,000; Oct. 14.

The major portion of these funds will be used by the borrower to acquire, rehabilitate and expand facilities serving an Air Force SAGE installation. Funds are also provided to enable the borrower to acquire and rehabilitate toll station facilities. All of the acquired properties, located within the borrower's North Havre exchange, are owned and operated by the Mountain States Telephone & Telegraph Co.

The cooperative proposes service without toll charge between its North Havre exchange and the town of Havre, and between its South Malta exchange and the town of Malta.

REA loans to this borrower now total $4,223,000 which will aid in making possible new and improved service to 3,854 subscribers, including two SAGE installations. The completed system will consist of 18 exchanges. Thirteen of them are now providing dial service to approximately 2,100 subscribers.

Thomas Staff is president and Harold C. Ebaugh is manager of the Triangle association.

•

Blue Valley Telephone Co., Marysville, Kan.; $1,260,000; Oct. 15.

The new borrower, a cooperative, was incorporated in 1956. It plans to use these funds to improve service for 1,491 subscribers and furnish initial service to 303 subscribers in Kansas and in Nebraska. The subscribers who will receive improved service now receive magneto service from the following companies: Centralia Telephone Exchange, Force Telephone Co., Home City Mutual Telephone Co., Oketo Mutual Telephone Co., Summerfield Mutual Telephone Co. and Vermillion Telephone Exchange. The cooperative proposes to acquire and rehabilitate these properties.

New dial central offices will be constructed at Centralia, Wheaton, Home, Oketo, Summerfield and Vermillion.

E. C. Koeneke is president of the Blue Valley company.

•

Mountain Rural Telephone Cooperative Corp., West Liberty, Ky.; $408,000; Oct. 16.

This loan will provide initial service to 678 subscribers.

REA loans to this organization now total $1,537,000 which will aid in enabling it to provide new and improved service to 2,608 subscribers. The six exchanges of the system are in operation furnishing dial service to approximately 1,940 subscribers.

Ralph Gullett is president and Woodrow W. Barber is manager of the Mountain cooperative.

•

Valley Telephone Cooperative, Raymondville, Tex.; $150,000; Oct. 16.

These funds will enable the borrower to provide facilities to serve 163 new subscribers within its present service area, and to complete its authorized system. In order to furnish the additional service, the borrower plans to create a new exchange at Port Mansfield and construct a new dial central office there.

REA loans to the Valley cooperative now total $501,000 which will benefit 559 subscribers. The system, when complete, will consist of five exchanges of which four now provide dial service to approximately 290 subscribers.

J. B. Pinson is president and Tommy B. Karnes is manager of the Valley cooperative.

Perrine of Illinois Elected President of NARUC

George R. Perrine, chairman of the Illinois Commerce Commission, was elected president of the National Association of Railroad & Utilities Commissioners at its convention in Philadelphia during the week of Oct. 12.

Among other actions, the association instructed its special Telephone Committee to proceed with studies of further refinements in separation procedures and to continue with studies of Western Electric's accounting system, cost of apportionment procedures, and pricing policies.

Testing Nuclear Power

"In the long-range plans of any large-scale nuclear power industry, the breeder reactor is certain to be extremely important [because it will provide an unlimited fund of fissionable fuel to replace diminishing supplies of coal, oil, and hydroelectric power. The United States is wise in continuing to experiment with methods of nuclear power production, instead of rushing ahead to build many plants of the types now available]. Only in this way can we make sure that we get the most out of our investment in power production, by obtaining the most efficient nuclear power plants for the future."—WALKER L. CISLER, *president, Detroit Edison Co.*

LEFT PHOTO: United Telephone Co. of Pennsylvania, in preparation for the history-making Eisenhower-Khrushchev meetings, installed its 100,000th station in the Gettysburg, Pa. headquarters of Presidential Press Secretary James C. Hagerty (right). John Caldwell, United's Gettysburg district manager, looks on. RIGHT PHOTO: Press headquarters at Gettysburg where reporters, radio commentators and writers from all corners of the globe converged to cover the news of the historic conferences. Hundreds of long distance calls including transoceanic calls to London, Moscow, Tokyo and other major cities originated here. Photo shows only a small segment of press room and battery of telephone booths.

BUSINESS NEEDS CLIMATE

Continued from page 22

grocer—or the manager of the local supermarket—will rub his hands with expectation. So many more wage earners in town—so many more families—so many more customers for *him*.

Well, if he is smart and runs a good show, he ought to get more than his share. But the benefits are not likely to accrue to him exclusively. All this growth is going to change things, and there will be new grocers and new grocery stores coming along, and life in that particular town will be different from what it was before. I am simply saying that people in the South will have to be prepared for this, and ready to take it in stride.

Governments' Fiscal Policy

May I also make this comment: I am convinced that the economic progress of the whole country, and hence of any part of it, depends in no small measure on the combined good judgment of Americans everywhere in demanding sound fiscal performance by all their governments—local, state, and national. I have strong hopes and great faith that the leadership of the South will demonstrate the value of such performance. I believe you can and will show that the way to a better life is not to spend what we do not have, but to create more ample means and live within them. Your influence in this respect has been most important and can be decisive in the nation, with benefits spreading out to all and returning also to you.

Finally, I believe that in such a framework, progress in communications will make a large and even startling contribution to the future welfare of the South. The details of this would get me into another talk, and one is enough for one evening.

However, with what we see emerging from the laboratory and into practical use in the next 20 years, the possibilities seem to us—well, I shall just say they are breath-taking. We are confident of our ability to provide services that for convenience, abundance, versatility, and assistance to all other industry, will go far beyond what we can accomplish today.

One reason why I have spoken as I have is that I cannot get this potential out of my mind. It is not what we want to *get* that is fundamental, it is what we want to *do*. But to do it all and do it well—to make the greatest contribution we can—it seems to me essential that I urge upon you now the need for a business climate that invites confidence and inspires action.

Ask the most from us who are in business. Expect the most of us. But at the same time, keep us free to earn the means to serve. You want *our* enterprise—then give us *your* confidence. Give us the room we need, and the encouragement to employ our energy and talents without stint. The future cries out for it—and I believe with all my heart that your affirmative answer is vital to the welfare of all your states.

TELEPHONE IN DEVELOPMENT OF SERVICE INDUSTRIES

Continued from page 34

The balance, of course, depends on the time-factor. A crude example would be something like this: We don't write letters requesting laundry service or temporary discontinuance of laundry service, or milk delivery, electric and gas service or whatever the case may be.

Discussion of Question No. 2. The entire subject of the creation of wealth through the service industries has been seriously neglected. That may be a good thing. At least, here is a fertile field that should keep economists busy for years to come and perhaps something will be produced as challenging as "imperfect competition," "monopolistic competition," and related accomplishments.

Let us take a firm specializing in cleaning the exteriors of office buildings. If, as has been contended, the service industries produce wealth and income, how is it possible for an establishment engaged in the process of cleaning to produce wealth?

While the hypothesis which follows is not a perfect answer to the question, at least some light is thrown on this rather difficult phase of economic deliberation by thinking along these lines: The office building under study was reaching the point where it was becoming more and more difficult to rent office space because of the dirty appearance of the building. Cleaning will stabilize the rental situation.

Practically all of the service categories depend on the time factor. The time factor is present when we call a laundry for laundry service, or when we call a dairy for milk service. Again, we do not write letters for this type of service.

Discussion of Question No. 3. Our personalities and our attitudes con-

The name Klein on leather goods is known and preferred by linemen and electricians everywhere. Klein tool belts, safety straps, pouches and pockets represent the highest in quality, the safest in design and construction.

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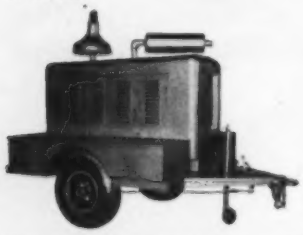

Units provide both single phase power for lights and 3-phase power for other needs. Many exchanges in an area can be served by a single unit.

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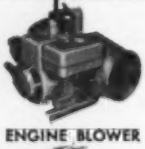

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tinue to be most profoundly influenced by the 500 or more service industries that have become integrated into our daily lives. A woman who has been emancipated from gruelling domestic tasks is not the same person as the woman who is still chained to that type of drudgery. The man who uses a power mower is a slightly different individual from the man who still sweats with a push-type mower. And no one has the slightest desire to go back to the way things used to be done.

Discussion of Question No. 4. Finally, we do not plan as well as we could because too many of us have never really abandoned the false doctrine that wealth is directly dependent upon only such means of tangible production as farming and manufacturing.

Past conceptions will have to be altered and in some cases abandoned if we are ever to be fully realistic about the age in which we live. Man began to learn something about economic production when he first went to work, and that, we are told, took place immediately following Adam's eviction from the Garden of Eden. The time factor from that tragic day until 1959 is rather considerable with plenty of opportunity to learn the ABC's of economic wealth in terms of material goods and agriculture.

However, the service industries began, as we understand them today, at the turn of the century, or less than a century ago. It now becomes plain why we will have to burn a little midnight oil so that we can more intelligently plan for the future, on the basis of better understanding, the deep significance of the 10 service divisions which have been discussed in highly abbreviated form.

MICHIGANDERS 24th CONVENTION CHRONICLES FIRSTS

Continued from page 36

Ottawa Telephone Co., Borculo, Mich.; Milton Krieg, supervising repair foreman for Michigan Bell at Grand Rapids; and Ron Kinsman of General Telephone Co. of Michigan.

Al Spry, owner of the Community Telephone Co., at Howard City, was elected to the association's board of directors to succeed C. Reginald Smith of Port Hope. D. K. Carlson, Morenci Home Telephone Co.; K. B. Sage, Traverse Bays Telephone Co. of Central Lake; and Pat Taylor of Pickford Telephone Co. were re-elected to the board.

The directors in addition to electing Mr. Reynolds as president, selected the following officers: Vice presidents, John Collver, Climax Telephone Co.; and Mr. Taylor; treasurer, K. W. Benckert, General Telephone Co. of Michigan; and executive secretary, Charles D. McLellan.

Recognition of Mrs. Ruth Davis, secretary of the Citizens Telephone Co. of Bridgman, Mich., whose telephone career began 50 years ago in Lincoln, Neb., was a highlight of the convention banquet program, at which Roy Putnam of General Telephone Co. of Michigan acted as master of ceremonies.

Managers of the new member companies who were welcomed to the convention during the banquet included: Clarence Donovan of Delton Telephone Co.; Bill Schmidt of Shiawassee Telephone Co., Perry; Otto Gottschalk of Concord Telephone Co.; Louis VanDenBerge of Ottawa Telephone Co., Borculo; and Jim Hoogesteger of Mesick Telephone Co.

This couple enjoying moment of relaxation at the Michigan convention are Mr. and Mrs. D. M. Davis of Bridgman. Mrs. Davis, who is secretary of the Bridgman company, was honored at the convention banquet for her 50 years in telephone service.

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New General Electric Transistorized Progress Line

General Electric's new Transistorized Progress Line will fit in more places, in more different positions, than any other two-way mobile radio you can buy today.

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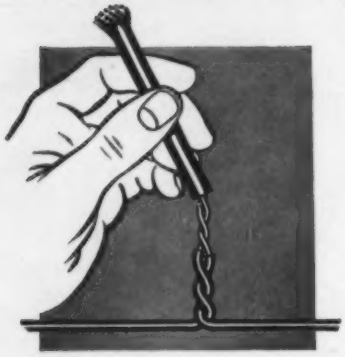

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Courts and Commissions

Grant EAS for United; OK Rate Increase in N. C.

The North Carolina Utilities Commission on Oct. 12 approved toll-free service between the Kernersville exchange of the United Telephone Co. of the Carolinas, Southern Pines, and the Southern Bell Telephone & Telegraph Co. exchange at Winston-Salem, and at the same time, increased rates for United to offset the loss of the toll revenue (TELEPHONY, Sept. 5).

The commission stated that an "overwhelming majority" of the subscribers of the Kernersville exchange had approved the removal of toll charges and the higher rates.

The new schedule of rates will be as follows:

One-party business	$12.50
Two-party business	11.00
Four-party business	9.00
Multi-party business	6.50
One-party residence	6.00
Two-party residence	5.25
Four-party residence	4.25
Multi-party residence	4.25

Get Rate, Finance, Service Bids; Grant 4 in Ind.

The Indiana Public Service Commission recently received the following petitions:

The Indiana Bell Telephone Co., Inc. on Sept. 15 requested Extended Area Service (EAS) between its Kendallville exchange and the Albion exchange of the General Telephone Co. of Indiana, Inc.

The Daviess-Martin County Rural Telephone Corp., also on Sept. 15, asked to raise its rates.

On Sept. 24, Indiana Bell Telephone Co. asked for EAS between its Spencer exchange area and the Elletsville exchange of the Smithville Telephone Co., Elletsville. Indiana Bell also jointly petitioned with the Clay County Rural Telephone Cooperative, Inc., the Patricksburg Telephone Exchange, and the Coal City Telephone Co. to establish EAS between Spencer and the areas served by Patricksburg and Coal City after the Clay County Rural company purchases and cuts over to dial the Patricksburg and Coal City areas, which will replace the present standard toll service.

The McCarter Telephone Co., Fountaintown, petitioned to sell and Indiana Bell to purchase, the Fountaintown exchange on Oct. 2.

Sweetser Rural Telephone Co., Inc., on Oct. 13 asked permission to borrow money; increase rates, and to establish EAS between Sweetser and the Converse and Marion exchanges of Indiana Bell.

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The Indiana commission has also issued these orders:

The Lanesville Telephone Co. on Sept. 25 was granted permission for new rates (TELEPHONY, July 18), as follows:

One-party business	$4.50
Party-line business	3.50
One-party residence	3.00
Party-line residence	2.50

The Sullivan Telephone Co., Inc. on Sept. 30 was given permission to borrow $32,000 at 4½ per cent in payment of the costs of changeover of the Graysville exchange. A new rate schedule was also authorized for the company as follows:

One-party city business	$4.25
One-party rural business	4.25
City business party line	3.75
Rural business party line	3.75
One-party city residence	4.00
One-party rural residence	3.75
City residence party line	3.75
Rural residence party line	3.75

In another action, also on Sept. 30, the commission approved a rate increase of $26,100 for the Bremen Telephone Corp.

San Francisco Sues PT&T For Back Street Use Taxes

The city of San Francisco has filed a suit in California Superior Court against the Pacific Telephone & Telegraph Co., asking for $1,842,180 in back street-use taxes.

This action is considered to be a counter move against one filed by the company in superior court two days before seeking approximately 1.7 million dollars for telephone services furnished the city since October 1956.

Ralph N. Buell, the company's San Francisco division manager, stated: "The services have been furnished and we believe the city should honor its obligations to pay for them. The city apparently feels otherwise.

In a situation such as this, our only resort is to the courts. We cannot delay any longer in this matter because otherwise the statute of limitations would run against us."

He also pointed out that from October 1956 to June 1959, the company has paid the city $11,873,298.94 in property taxes.

City Attorney Dion Holm, who filed San Francisco's suit against the company, claimed that the $1,842,180 was due through an agreement which provided that the company for its "use and occupancy of the streets" would pay the city 2 per cent of its gross receipts from local telephone service.

The agreement provided that the company supply a verified annual statement to the city and make payment within 10 days, Holm stated.

He said the company had not filed such a return or made any payments during the period Oct. 4, 1956 and Oct. 3, 1958.

The California Supreme Court in April of this year refused to review its Mar. 17 decision invalidating the San Francisco franchise tax, asserting that construction and maintenance of telephone lines is under state, not city jurisdiction (TELEPHONY, May 9).

The court also contended that the city could not legally issue a franchise to the telephone company, which, it said, did not need a city franchise because it already has a state franchise.

Approve Sale; Seek Purchase OK in Missouri

The Grand River Mutual Telephone Corp., Princeton, on Oct. 21 was given permission by the Missouri Public Service Commission to purchase the Farmers Mutual Telephone Co., Powersville.

Also in Missouri, on Oct. 20, Charles R. Spicer filed a petition with the commission asking to sell the Missouri Union Telephone Co., Richards, to Kenneth J. Kern and Raleigh F. Mansur. The Missouri Union company has exchanges at Richards and Metz.

Two Ask Raises in Wis.

The Wisconsin Public Service Commission on Oct. 22 was to hear two petitions for increased rates for dial service. The applicants are the Lakeland Telephone Co., Minong, and the Lake Nebagamon Telephone Co.

Ask Rate Raise in Cal.

The California Interstate Telephone Co., Victorville, has filed an application with the California Public Utili-

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For complete list of offices see pages 4-5

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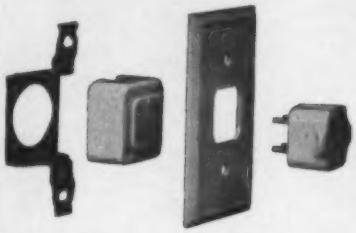

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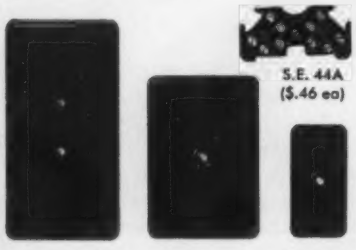

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ties Commission for a rate increase. The raise, which would amount to $421,300 annually, would give the company a 7 per cent rate of return.

Ask Authorization for Dial Raise in Minnesota

The Minnesota Railroad & Warehouse Commission on Oct. 27 was to have heard the application of the St. James Telephone Co. for increased rates in St. James and Godahl in connection with the cut-over to dial.

The company is asking to eliminate the 25-cent discount on bills paid on or before the 10th of the month.

Proposed residence rates compared with those now in effect are as follows:

	Present	*Proposed*
One-party residence ..	$3.55	$7.50
Two-party residence ..	2.55	4.25
Four-party residence..	2.00	3.75
Multi-party residence.	3.80	...
Rural residence, common battery.... ...		4.25

Increased Godahl business rates would be as follows:

One-party business	$6.25
Two-party business	5.50
Rural multi-party business, common battery	5.25

Announce Incorporation Of Illinois Company

Charles F. Carpentier, Illinois Secretary of State, has issued a business charter to the Tonica Telephone Co., it was reported on Oct. 10.

Romeyn Ebner, Robert King and Wayne Scott were listed as incorporators.

They were authorized to issue 350 shares of stock at $100 a share.

Approve Sale in Wisconsin

The Wisconsin Public Service Commission on Oct. 8 granted the petition of the Danbury Telephone Co. to sell to the Solon Springs Telephone Co. (TELEPHONY, June 13, 1959).

Ask Dial Raise in Wisconsin

The Wisconsin Public Service Commission on Oct. 27 was to have heard the application of the Badger State Telephone & Telegraph Co. for authority to increase its rates for dial service.

Ask Financing OK in Missouri

The Wheeling Telephone Co., Inc., has applied to the Missouri Public Service Commission for authority to borrow $52,000 from Stromberg-Carlson Co., a division of General Dynamics Corp.

Coffman Is General System Exchange Plans Engineer

Joseph E. Coffman, general plant extensions engineer for the General Telephone Co. of Indiana, has been appointed exchange planning engineer with General Telephone Service Corp. in New York City.

J. E. COFFMAN

He assumed his new duties Oct. 1, according to an announcement from L. H. Meyer, president of General of Indiana.

In his New York post, Mr. Coffman will engage in long-range General System planning on exchange plant and facilities. He also will coordinate system training programs and instructional material concerning exchange fundamental planning.

Mr. Coffman has been with General Telephone since 1949. He started with the California company at Santa Monica in the general engineering department. He served as draftsman, fieldman, truck studies engineer and fundamental planning supervisor before being transferred to General of Indiana in July, 1957, as general plant extensions engineer.

Born in Farmington, Mo., he moved to Littleton, Colo., near Denver, at an early age and was graduated from Bear Creek Valley Consolidated High School. He attended the University of Colorado for two years. While in California, he took several University of California extension courses and later completed a one-month engineering management training course at Michigan State University.

Before joining General, Coffman worked for 10 years at Douglas Aircraft Co. in California in the experimental aircraft and development department.

During World War II, he was in the Navy for two years. Stationed in the South Pacific area, he served as an aviation machinist's mate on a PBY with the Air-Rescue Squadron.

Read Marketing Supervisor For General of Michigan

James L. Read has been appointed to the position of marketing supervisor of General Telephone Co. of Michigan, T. A. Saunders, president, has announced. In his new assignment, Mr. Read will be responsible for the staff functions of the marketing & sales department.

J. L. READ

Mr. Read's experience and background in the telephone field extend over a period of more than 20 years. He began his telephone career with the General Telephone Co. of Indiana in 1938, working as groundman, switchman and testman.

In 1944 he joined General Telephone Co. of Michigan as assistant traffic superintendent.

Returning to the Indiana company in 1945, he served as commercial survey engineer in the general commercial department.

Again at Muskegon, he served as area traffic manager for the western division, was later promoted to general traffic supervisor and then to general traffic manager.

In 1957, Mr. Read assumed the duties of personnel supervisor, the position he held until the time of his present appointment.

To Breathe Free

"The only freedom worth possessing is that which gives enlargement to a people's energy, intellect and virtues." —CHANNING.

SW States PR Director Texas Association Officer

R. L. Post, public relations director for The Southwestern States Telephone Co., Brownwood, Tex., has been elected second vice president of the Texas Public Relations Association.

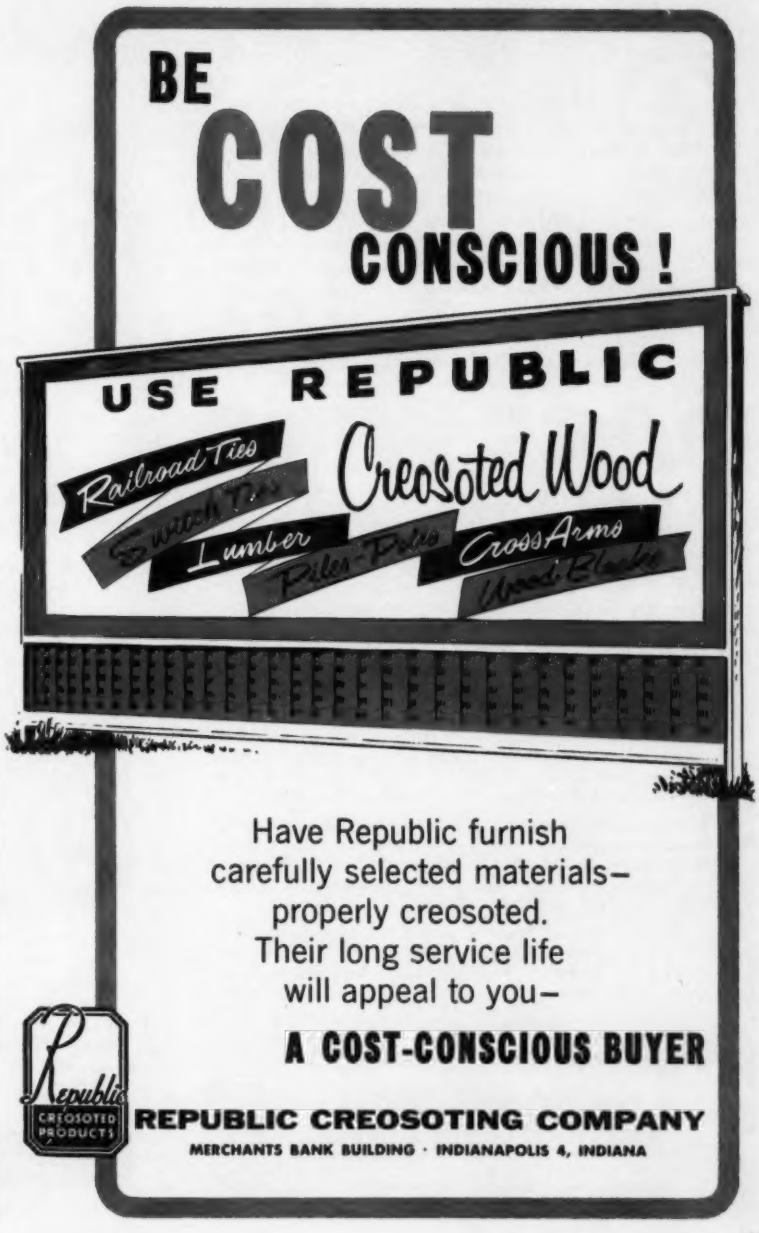
The Texas Public Relations Association is composed of executives in public relations work throughout the state.

Horn of Plenty

Time magazine forecasts that during the last quarter of this year the U. S. economy ". . . . will pass a long-awaited milestone far ahead of schedule." We will be producing, earning, spending and investing at the rate of 500 billion dollars—half a trillion—a year. This works out to the production of about $11,000 worth of goods and services for each of the country's 45 million families.

The Ineffectual Lie

"A lie is a very short wick in a very small lamp. The oil of reputation is very soon sucked up and gone. And just as soon as a man is known to lie, he is like a two-foot pump in a hundred-foot well. He cannot touch bottom at all."—HENRY WARD BEECHER.



Maine Telephone Man Celebrates 102nd Birthday

Samuel B. Shepard of Bar Mills, Me., is known to hundreds all over New England as "Uncle Sam." Like the famous uncle in the striped pants, he is a legend; this Aug. 24 added one more year to a record that may never be broken: oldest active telephone man, at a crisp 102 years!

All of the friends who dropped in to wish him many happy returns agreed that Mr. Shepard certainly is active in mind and spirit, as he greeted old friends by name and took a very jittery editor in calm stride. The open house, arranged by Mr. and Mrs. Harold Carroll and others in the Saco River Telephone Co. office, was completely dominated by the figure of the man all came to honor.

The Saco River company, of which Sam Shepard is still president, was the first of the Independents in the state of Maine. Mr. Shepard—then an insurance man who had secondary interests in law and real estate—was one of the original founders who thought "this new talking telegraph could be useful to country folk as well as city people."

On Feb. 23, 1889, the company started operation, and Sam Shepard has been connected with it in some capacity for all these 70 years.

Front Cover Photo

Telephone company personnel helping Samuel B. Shepard celebrate his 102nd birthday are, left to right, Harold Carroll, manager; Mrs. Violetta Nason, bookkeeper; Mrs. Virgie Nason, secretary; Mrs. Shirley Walker, commercial; Miss Marcia Nason cutting the cake.

Some time back Mr. Shepard, realizing the vital role which an up-to-date telephone system plays in the life of a community, placed the reins in the hands of younger men—charging them to provide the best in dial service. Harold Carroll assumed the managership, an REA loan was negotiated, rebuilding and conversion of the Bar Mills and Waterboro exchanges was begun forthwith.

People with less conviction might have hesitated to start this program at all; times were not too easy in these towns, what with the textile industry shaky—some large mills had already closed in the three adjacent cities—and a murderous forest fire had leveled half of Waterboro in its path and robbed the remainder of a principal means of livelihood. But in the face of this the telephone company went ahead with its conversion to XY Dial and has enjoyed what is described as a healthy growth since cut-over.

"Uncle Sam" Shepard has a keen interest in all new developments—telephone and otherwise. A one-time member of the Maine House of Representatives, he keeps up with present politics and world affairs; wonders if the young fellows like Eisenhower don't need some "seasoned" advice, but hastened to say he is not a volunteer. As the oldest living alumnus of Colby College, he was presented a sports jacket on his birthday; quipped that if the team was winning he wouldn't need to wear it to keep warm.

It gives one pause to think that within the adult life of this one man is contained everything that has ever been known or done in telephony. And for more than an average man's total life, Sam Shepard has had a part in it.

Speaking for all telephone men everywhere, this magazine sends a salute to "Uncle Sam" Shepard—dean of them all.

Super Climber

"Parting thought—our national debt may reach the moon before any rocket does."—*Stratton (Colorado) Press.*

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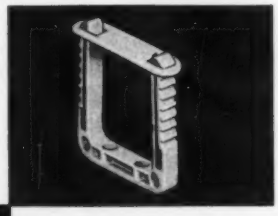

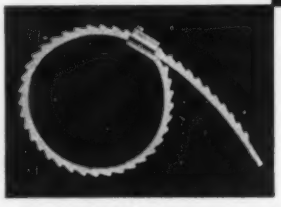

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SW Bell Names Groh, Smith In Okla.; Williams Retires

Harold B. Groh, vice president and general manager for Southwestern Bell Telephone Co. in Oklahoma, has been named vice president in charge of public relations for the company, effective Nov. 1.

H. B. GROH

He will succeed Douglas Williams who will retire from his post on Oct. 31 after 37 years of company service.

Edward C. Smith, general commercial manager of the company's Kansas area, was elected vice president and general manager, also effective Nov. 1, to succeed Mr. Groh in Oklahoma.

DOUGLAS WILLIAMS

Mr. Groh is a native of Belleville, Ill., and a graduate of the University of Illinois. He began his telephone career in 1929 as a traffic assistant in St. Louis.

Since then he has held a variety of management positions in the traffic department in Arkansas, Kansas and Missouri. In 1952 he was named general traffic manager for Missouri-Illinois; then assistant vice president of operations; and in 1954 was promoted to general manager of the company's Oklahoma area. In 1958 he was elected vice president and general manager for Oklahoma.

E. C. SMITH

Mr. Groh has served on the Education Committee of the U. S. Chamber

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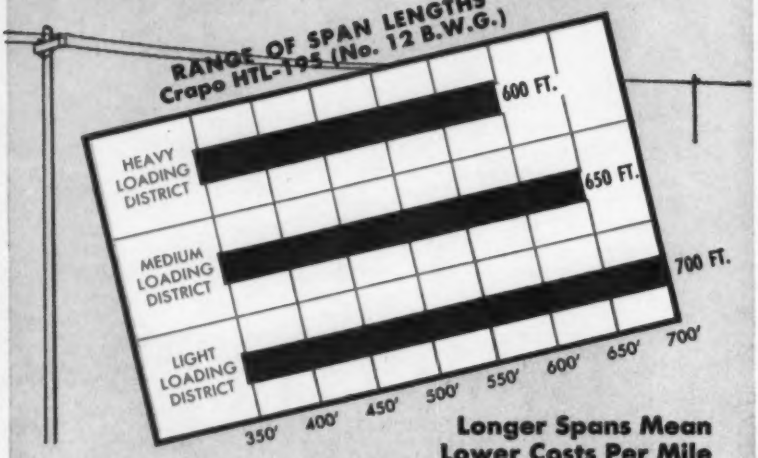

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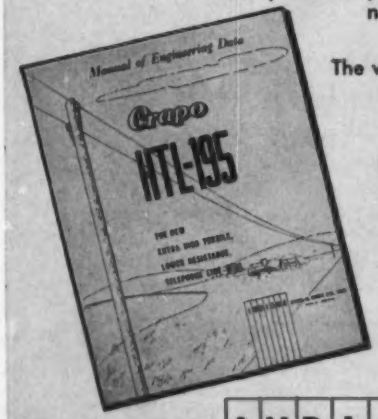

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INDIANA STEEL & WIRE COMPANY, INC.
MUNCIE, INDIANA

of Commerce and the governor's Economic Commission in Oklahoma.

Mr. Williams is a native St. Louisian. Before joining the Southwestern Bell company, he was a reporter for the *St. Louis Post-Dispatch*. He later served as assistant director of publicity for the Southwest Division of the American Red Cross and as secretary of publicity for the St. Louis Chamber of Commerce.

Mr. Williams began his telephone career as advertising manager for Southwestern Bell in 1922. Six years later he was appointed general advertising manager for the company.

In 1938 he moved to New York as assistant vice president of the American Telephone & Telegraph Co. He was elected to his present position with Southwestern Bell in April, 1944.

Mr. Williams is a past president of the St. Louis Chapter of the Public Relations Society of America.

Mr. Smith is a graduate of Washington University, St. Louis.

He started with Southwestern Bell in 1929 as a student and worked his way up through the commercial department, filling such jobs as district manager, directory manager and division manager, all in St. Louis.

In 1957 he was named head of the commercial department in the Kansas area.

Principals of ceremony in first presentation of the Frank H. Woods memorial bronze award to a Lincoln (Neb.) Telephone & Telegraph Co. employe on Oct. 2 in Lincoln were: LT&T president T. C. Woods, right; left, recipient Francis E. Smith, combinationman; and center, Wire Chief B. D. Pattison. Smith received the award and a cash gift of $250 in recognition of his "meritorious action" in saving the life of a four-year-old girl, badly injured in a traffic accident last Jan. 30. With the company since 1942, Smith has served also as groundman and lineman.

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Catalog No.	Guaranteed Pairs	AWG	Messenger Size	Minimum Breaking Strength (lbs.)
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RDW-0419-U18	4*	19	.109″	1800
RDW-0519-U18	5	19	.109″	1800
RDW-0619-U18	6*	19	.109″	1800
RDW-1119-U18	11	19	.109″	1800
RDW-1219-U20	12	19	.120″	2200
RDW-1219-U28	12*	19	.134″	2680
RDW-1619-U18	16	19	.109″	1800
RDW-1619-U20	16	19	.120″	2200
RDW-1619-U28	16	19	.134″	2680
RDW-0322-U18	3	22	.109″	1800
RDW-0622-U18	6	22	.109″	1800
RDW-1122-U18	11	22	.109″	1800
RDW-1222-U18	12*	22	.109″	1800
RDW-1222-U20	12	22	.120″	2200
RDW-1622-U18	16	22	.109″	1800
RDW-1622-U20	16	22	.120″	2200
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Acton Laboratories Names Canadian Representative

Conway Electronics Enterprises of 1514 Eglinton Ave. West, Toronto, Ont., has been appointed to represent Acton Laboratories Inc. (ALI) in Canada.

Conway will handle the complete ALI line of electronic laboratory test instruments, which include vacuum tube voltmeters, phase meters, ponogometers, impedance measuring meters, and oscillographic recorders. ALI states Conway is equipped to provide factory-trained service to the ever-growing electronics markets throughout Canada.

GT&E Acquires Remaining Interest in Lenkurt

General Telephone & Electronics Corp. has arranged to acquire the remaining interest in Lenkurt Electric Co., Inc., a GT&E manufacturing affiliate with headquarters in San Carlos, Cal., it was announced in New York on Oct. 15.

In making the announcement, Donald C. Power, chairman of GT&E, said that the transaction will be consummated in the near future. The purchase price was not disclosed.

Lenkurt is a manufacturer of carrier-current and microwave radio equipment.

Atoms and Our Future

"With the enormous increase in population will come great demands for food to feed and houses to house the people of the world and the question of the adequacy of the food supply. It will require all of our ingenuity and effort to increase the supply rapidly enough, though we are at the moment in a state of surplus. In another vital area — electric power — the supply is likely to be short of demand. True that for several centuries ahead we can imagine mining enough coal and oil to generate electric power for the needs of the future generations, but coal and oil are regenerated, at any rate that is appreciable compared to the rates of usage, so with the explosive increase in population we envisage the exhaustion of at least the more economic supplies of fossil fuels. The atom will help us in both of these—in the first by helping us better understand the farming methods and perhaps helping us to develop more prolific crops by the irradiation of seeds to produce mutants and in the second by giving us atomic power."—WILLARD F. LIBBY, *member, Atomic Energy Commission.*

Convention Calendar

1959

Association	*Date*	*City*	*Hotel*
Alabama	Nov. 9 and 10	Birmingham	Thomas Jefferson
Georgia	Nov. 11 and 12	Atlanta	Dinkler-Plaza
Oklahoma	Nov. 18 and 19	Oklahoma City	Skirvin
South Dakota	Nov. 18 and 19	Huron	Marvin-Hughitt
Florida	Nov. 30 and Dec. 1	Jacksonville	Robert Meyer

1960

Minnesota	Feb. 7, 8, 9 and 10	St. Paul	St. Paul
Louisiana	Feb. 24 and 25	New Orleans	Jung
Kentucky	Mar. 1	Lexington	Phoenix
Texas	Mar. 7 and 8	Dallas	Baker
Ohio	Mar. 28, 29, and 30.	Columbus	Deshler Hilton
Iowa	Apr. 5 and 6	Des Moines	Ft. Des Moines
Nebraska	Apr. 19 and 20	Omaha	Sheraton-Fontenelle
Indiana	May 4 and 5	Indianapolis	Claypool
Wisconsin	May 10 and 11	Milwaukee	Plankinton House
Illinois	May 19 and 20	Springfield	Abraham Lincoln
Kansas-Missouri*	May 23 and 24	Kansas City	Town House
Pennsylvania	June 6 and 7	Bedford Springs	Bedford Springs
California	June 8, 9 and 10	San Francisco	Fairmont
Washington-Oregon*	June 16 and 17	Portland	Sheraton Portland
New York	June 20, 21 and 22	Schroon Lake	Scaroon Manor
USITA	Oct. 9, 10, 11 & 12	Chicago	Conrad Hilton

*Joint Convention

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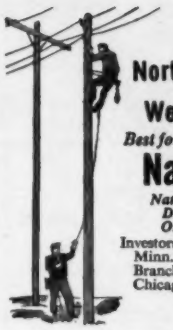
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International Creosoting and Construction Co., Galveston, Texas.—Creosoted Southern Yellow Pine Poles. Plants Beaumont and Texarkana, Texas.

International Paper Co., Wood Preserving Division — 926 Grand Avenue, Kansas City, Missouri—"LONG-BELL" pressure-treated Southern Pine and Douglas Fir Poles—Creosote or Penta.

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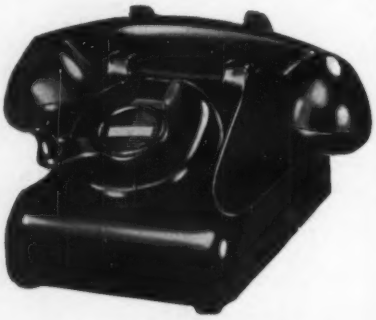

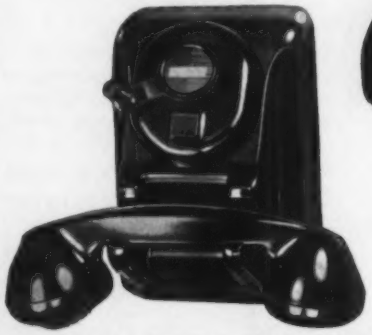

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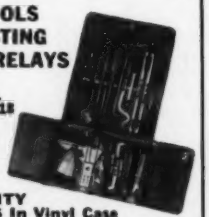
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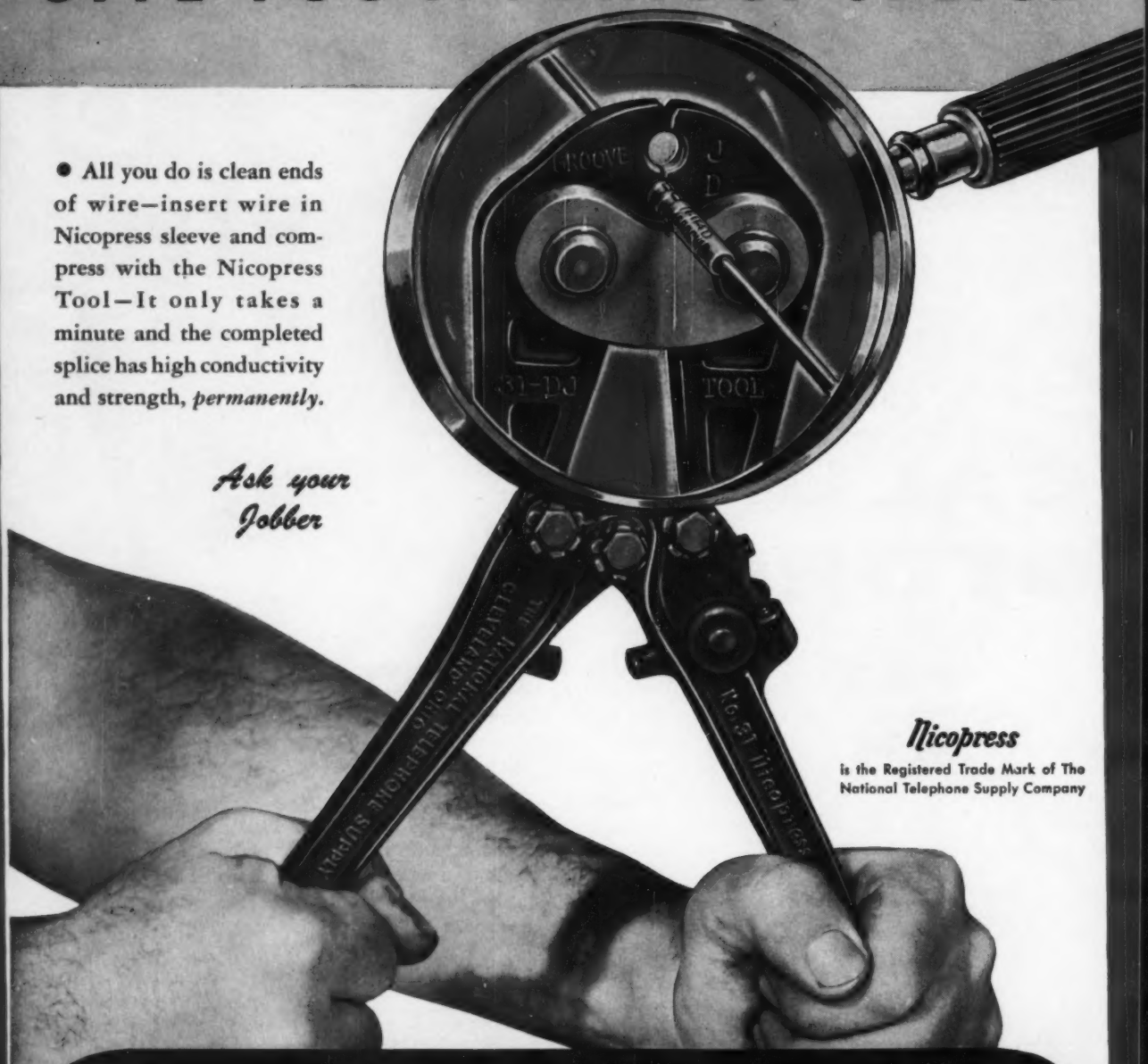

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